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THE CAUSES AND CONSEQUENCES OF BARRACKS ISOLATION

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Submitted by

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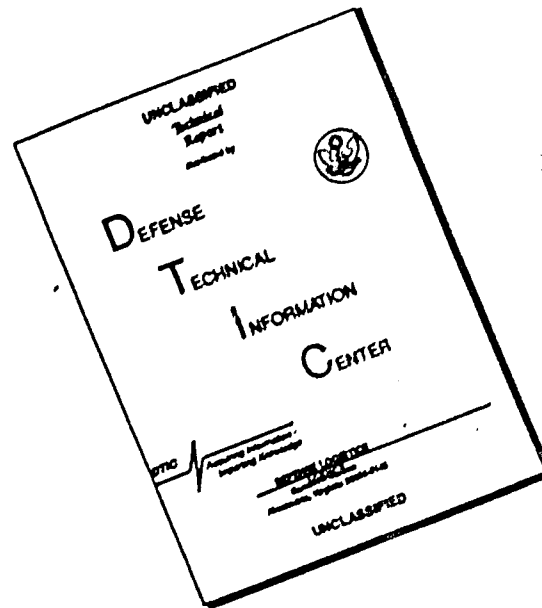
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) → Soldiers drawn from a longitudinal cohort of 597 first-term enlistees assigned to USAREUR were classified as barracks isolates or non-isolates on the basis of self-report and supervisors' ratings regarding use of off duty time at six weeks and again at six months. Soldiers were tested on cognitive and perceptual skills upon arrival and again at six months and were surveyed for career and enlistment intentions, attitudes and behavior on arrival, at six weeks and again at six months. Performance ratings were obtained at six weeks and six months. → over (see reverse side)			

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20. The pretests of cognitive and perceptual skills indicated no initial difference between isolates and non-isolates at the point of arrival. The posttest after six months indicates that isolates scored significantly lower than non-isolates on cognitive skills. No differences were found on perceptual skills. Performance rating indicates that by six weeks the isolate is a poorer performer in some areas and by six months the differences are significant for most performance indices. ←

In general, the barracks isolate differs very little from the non-isolate on arrival. Some of the differences which do exist include age (the isolate tends to be somewhat younger) and past experiences (the isolate tends to be more of a homebody). Isolates do not differ from non-isolates in education, ethnic group, initial attitudes toward the Army, or self-esteem. By six weeks, the barracks isolate tends to be a loner, to have fewer dates and friendships, to withdraw from sports and recreational activities except television, to be in trouble with NCOs, and to experience greater stress. By six months the barracks isolate can be distinguished from his or her peers by significantly greater drug and alcohol use, sometimes the intent to try to get out of the Army prior to completion, less concern with doing a good job, and getting in trouble with officers.

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FOREWARD

The Human Resources Research Organization (HumRRO) submits this final report to the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) in conformance to Contract Number MDA 903-78-C-2042, "Operational Readiness and Adaptation Enhancement in USAREUR." The report presents the results of Task 5 (Subtask 1) of the project conducted under the above contract.

The work was performed during the period 25 September 1979 - 25 February 1983 by staff members of HumRRO's Special Projects Division. Dr. Richard L. Miller was the HumRRO Project Director. Project members included Dr. Richard Orend, Ms. Wendy McGuire, Mr. John Rice and Ms. Marsha Wallace. Dr. William W. Haythorn was the ARI Contracting Officers' Technical Representative for this project.

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THE EFFECTS OF BARRACKS ISOLATION ON MILITARY PERSONNEL

Introduction

During the past twenty years a number of studies have examined the behavioral and physiological effects on humans which accompany a reduction in the level and variability of sensory, perceptual and social stimulation. Early studies of isolation and confinement (see Brownfield, 1965 and Solomon, Leiderman, Mendelson, and Wexley, 1957) reported the experiences of solitary sailors, explorers, prisoners, and other types of isolated people. Experimental work began in 1951 with Hebb's attempts to understand the mechanisms underlying "brainwashing" as well as the factors which would explain attention lapses under monotonous conditions, for example, radar screen monitoring (see Bexton, Heron and Scott, 1954). Studies of significantly reduced variation have examined the effects of sensory deprivation, perceptual deprivation, isolation and confinement on individual and group functioning (see Rasmussen, 1973).

While the lack of variation can be thought of as an individual variable, it is equally important to note that groups of individuals can together experience reduced variation when isolated or confined. Isolated groups, according to Mullin (1960), are confronted with three major stresses. First, isolated environments regardless of their relative complexity eventually become boringly predictable when compared with conventional environments. Second, the interdependence of the members of isolated groups requires them to find ways to cope interpersonally under somewhat unfavorable conditions. Third, many of the usual sources of emotional satisfaction are often missing in isolated

environments. In the U.S. Army in Europe (USAREUR), a kind of group isolation occurs which has been labeled the "barracks rat" phenomenon. Basically, this characterization is applied to the approximately 20-25% of enlisted soldiers who seldom, if ever, venture out of the military community in which they are stationed (Farmer, Note 1). The ways in which a typical barracks isolate behaves are stereotypical and usually follow a pattern of sameness reminiscent of artificially isolated environments. The barracks isolate makes a circle between his barracks room, work, and perhaps one or two recreational facilities on post (e.g., EM Club, movie theater, bowling alley). This lack of variation limits the soldier's opportunities for contact with individuals other than those within his work unit and barracks. This coupled with the reduced opportunities to participate in activities which would be available in the continental United States point to the "barracks rat" syndrome as a kind of self-selected group isolation.

What are the consequences of being a barracks isolate? In a statement of human research needs, the 32nd Air Defense Command has noted that barracks isolation may create an apathy on the part of the soldier which "negates costly recreation and drug abuse programs." In addition, it very well may be that individual and group performance skills are affected by barracks isolation. Two individual skills that might be so affected and which have received previous research attention are perceptual acuity (vigilance) and cognitive problem solving skills. In a review of the literature on the effects of impoverished environments, Zubek (1964) noted that, in general, perceptual skills and sometimes cognitive skills are impaired by conditions of isolation and confinement.

Cognitive Skills

A number of scientists have explored the impairment of cognitive functioning and performance efficiency as a result of extended isolation and confinement (Eilbert and Glasser, 1959; Burns and Kimura, 1963; Rohrer, 1961). Actual tests of cognitive skills during isolation have, however, been relatively rare. Hanna and Gaito (1960) found that intellectual functioning of individuals in six-man groups confined for one week was not impaired by their confinement. However, Zubek, Hasek, Sansom, Schuldermann, Wilgosh, and Winocur (1962) in a study which involved confinement of five or six person groups found significant impairment on a test of numerical reasoning but no effects on verbal fluency, digit span, etc. Hammes (1964) found no evidence of intellectual impairment as measured by tests of verbal reasoning, numerical ability, logical reasoning, memory, etc., after two weeks of confinement. Similarly, McGrath, Maag, Hatcher and Breyer, (1962), Zubek (1969), Oleson and Zubek (1970), Yoshino (1967), and Robertson and Wolter (1963), all showed no decrement in intellectual functions after short term (one week or less) confinement. Adams (1964) found that Weschler Adult Intelligence Scale scores improved for psychiatric patients after six hours of sensory deprivation. Altman and Haythorn (1967) found that after ten days of isolation, the subjects were better than non-isolated subjects on a group task involving abstract reasoning. Thus, for short term isolation, cognitive skills have been shown to improve, decline and exhibit no changes.

Three studies involving longer periods of isolation (over one month) have been reported. Rodgin and Hartman (1966) found some decrement, but accounted for this with task-specific motivation after 56 days of isolation. Agadzhanian, Bizin, Doronin, and Kuznetsov (1963) found that after

60 days of isolation, error rates for solving mathematical problems had increased significantly; and, finally, Mullin (1960) has reported interview data with subjects following a three-month wintering-over period in Antarctica which suggests that many of the men suffered memory lapses and difficulties in concentrating. Also, intellectual activity, e.g., reading, was perceived to decline over time. In summary, it would seem that most of the studies relating intellectual functioning to isolation and confinement have shown either no effects or detrimental effects with the detrimental effects more often found in studies involving longer periods of isolation.

Perceptual Skills

Research relating perceptual skill levels to isolation and confinement is no more consistent than the research on intellectual skills. Zubek (1964) demonstrated that one week of stimulus deprivation resulted in a decrement in visual skills although auditory skills were unaffected. Adams and Chiles (1961) reported decrements in signal monitoring and vigilance tasks over 15 days of isolation. Alluisi, et. al., (1963) on the other hand, found no significant impairment of visual or auditory skills over a five to 15-day confinement. Farrel and Smith (1964) and Page, Dagley and Smith (1964) reporting on the Boeing 5-man/30 day confinement study, found significant improvement in perceptual skill performance over time. However, without a control group these data are difficult to interpret. Hartman, Flinn, Edmunds, Brown and Schubert, (1964) found no decrement in performance level for dyads isolated for 30 days and Rodgin and Hartman (1966) similarly found no degradation of perceptual skills in four-man crews isolated for 56 days. Altman and

Haythorn (1967) found that dyads isolated for ten days suffered impairment of individually-assessed perceptual skills but not on an assessment which required cooperation between the team members. Finally, Johnson, Smith, and Myers (1968) Smith and Myers (1966), and Smith (1967) all found that subjects' perceptual skills improved after one week or less of isolation. From the review of the above research, it would seem that most studies of isolation and confinement show that perceptual skills either are not affected by stimulus deprivation or are, in fact, improved by it. Those studies which do show negative effects are all studies of short term (15 days or less) isolation.

Barracks Isolation.

Barracks isolation differs from the classic stimulus deprivation isolation studies, described thus far. However, quite a bit of research has been done on individuals and groups in confined and isolated groups which may be of direct relevance to the barracks isolation experience. Willis (1960) has examined individuals working in the Canadian Arctic, Radloff and Helmreich (1968) have reported on the adjustment required of Naval personnel in Sealab II experiments, Sells (1965) and Eilbert and Gleser (1959) studied factors affecting the morale and adjustment of enlisted personnel at remote Air Force stations. A number of studies have focussed on the Antarctic "wintering-over" experience of U.S. personnel (see Mullin and Connery, 1959; Rohrer 1961; McGuire and Tolchin, 1961) and of Australian personnel (Palmai, 1963; Law, 1960)

From these studies, a number of factors which affect the adjustment of individuals in isolated environments can be identified.

Among these factors are job performance (Owens, 1966; Doll, Gunderson and Ryman, 1969), stress and emotional disturbance (Gunderson, 1963), social adjustment (Gunderson, 1973), off-duty activities (Doll and Gunderson, 1969), job motivation and satisfaction (Ryman and Gunderson, 1970) and physical and mental health (Gunderson, 1968).

The purpose of the present study is to determine the effects of barracks isolation on cognitive and perceptual skills, as well as its effects on drug abuse, job performance and related soldier attitudes and behaviors. Barracks isolation in USAREUR differs extensively from the kinds of isolation studied in the research described above. First, barracks isolation is significantly longer than any of the studies reviewed previously. Soldiers are stationed in USAREUR for two to three years, and individuals may isolate themselves for that entire period. Second, barracks isolation differs in terms of degree. Most isolation studied previously has been more severe than is barracks isolation. Third, individuals who are isolated in USAREUR choose to be so, unlike many of the laboratory experiments which randomly assigned subjects to isolated and non-isolated conditions. Finally, the opportunity to seek variation, to explore the outside environment is at all times generally available to the "Barracks rat." These differences between barracks isolation and the kind of isolation studied previously precludes easy generalization from the results of past studies to the current situation. However, a pilot study conducted in USAREUR does suggest that barracks isolation does impact in ways

similar to that found in previous research. Miller (1979) examined the effects of long-term environmental isolation on individuals' cognitive, perceptual, and job skills. In Study I, soldiers received tests of cognitive and perceptual skills both before and after three months of relative isolation on the military kaserne to which they were assigned. In Study II, soldiers were classified as isolates or non-isolates by supervisory personnel at three stages of their overseas tour: 1-9 months, 10-18 months and 19+ months. In Study II, soldiers were evaluated by their immediate supervisor as well as another leader on job performance. In Study I, the test results indicated that cognitive skill levels significantly declined after three months of barracks isolation, whereas perceptual acuity improved somewhat. In Study II, no differences were found between isolates and non-isolates in the early stages of an overseas tour. Isolates serving in the middle and late stages of their overseas tour scored significantly below comparable non-isolates in cognitive skills but not in perceptual acuity. Commanders rated isolates consistently below non-isolates on job skills. Differences were greatest for leadership qualities, ability to work with others, and knowledge of the job. The results of these studies offer evidence that problem-solving skills and job performance but not perceptual acuity are negatively affected by the relatively mild but extended isolation experienced by many military service members in an overseas tour.

In the present study, many of the areas examined in previous studies of enforced isolation and confinement, but not addressed in the pilot study, and which might be affected by barracks isolation will be explored.

Among these are reenlistment intentions, substance abuse, interpersonal relations, disciplinary actions, as well as attitudes towards work and the Army. A second difference between this study and the pilot study is the use of a standardized IQ test for measuring cognitive skills in the present study. Also, the current study uses an auditory test of perceptual acuity instead of a visual skills test. Finally, the current study uses a longitudinal approach and within-subjects design which will provide a more powerful test of the phenomenon.

Method

Study Participants

Participants in this study were 597 male and female enlisted personnel who entered USAREUR (First Armored Division and Eighth Infantry Division) during the first three weeks of November 1979. All participants were recent graduates of AIT centers and were beginning their first operational tour of duty.

Procedure

The initial questionnaires were given to incoming personnel at division in-processing centers on the morning of their second day in the division. Potential subjects were assembled in a classroom and asked if they would cooperate in the survey. (Both the required Privacy Act statement and an additional reminder of the voluntary nature of the initial survey and subsequent follow-up interviews were included in the introduction.) About 95% indicated a willingness to cooperate in the first interview, i.e., about 1 in 20 refused to answer the questionnaire.

These initial interviews were administered by HumRRO personnel with no military authorities present and included items designed to measure social behaviors, off-duty activities, interpersonal relationships, attitudes towards the Army and Germany, subjective stress and reenlistment/career intentions. This questionnaire was revised and administered again to the soldiers after six weeks and again after six months in USAREUR.

The initial tests of cognitive skills and perceptual acuity were administered at the division in-processing detachment only for those soldiers assigned to the Eighth Infantry Division. These tests were administered to small groups of soldiers and took about 45 minutes to complete. This administration of the tests was designated as the pretest. A posttest was administered to subjects who were assigned to certain pre-designated USAREUR battalions. Units with small numbers of subjects were not re-tested. The posttest was identical to the pretest and was administered approximately six months after the pretest had been taken. Again, subjects took the tests in small groups and took about 45 minutes to complete the tests.

In the pretest condition, subjects were assembled in the replacement detachment briefing room and the experimenter explained that they would be given a test of problem solving skills which was a part of an overall research effort designed to determine the effectiveness of Army training programs like the one (AIT) from which they had recently graduated. Subjects were assured that the test was for research purposes only and would not affect them personally in any official manner.

Follow-up administrations required the assistance of uniformed military personnel in the various target units. Each battalion with

participating subjects was asked by the division to identify an action officer who would be in charge of notifying subjects and administering follow-up questionnaires. Action officers were notified of the names of participating personnel about two weeks prior to the scheduled administration. They were also instructed on the appropriate administration procedures, which included: (a) reading instructions and Privacy Act Statements; (b) administering questionnaires only to groups of individuals to increase the feeling of confidentiality; (c) having respondents place completed questionnaires in sealed envelopes before turning them in; and (d) completing administration within two weeks of receipt of the instruments. Action officers were also responsible for the dissemination and collection of evaluation instruments which were required from each participant's rater and endorser each time a follow-up questionnaire was administered.

At both the six weeks and six month follow-up administrations, raters (supervisors) and endorsers of each subject were asked to provide job performance evaluations, as well as information about the subject's attitudes, behavior and discipline record. Also, subjects were characterized by supervisory personnel as being one of two types of individuals: barracks isolate or non-barracks isolate. Individuals designated as barracks isolates were those whose off-duty time was spent on the military post, generally in the barracks themselves with their few out-of-barracks activities being fairly routine: snack bar, movies and EM club. These individuals were those whom local slang would term a "barracks rat." Individuals designated as non-barracks isolates were those who spent their off-duty time generally away from the local military

base in varied activities including tours, visits to the local community, etc.

The posttest administration of the cognitive and perceptual skills tests was again conducted by HumRRO personnel in the same manner as the pretest administration. In the posttest condition, soldiers were additionally told that the researchers were conducting a follow-up investigation in order to determine how stable and reliable the test instrument was.

Assessment Instruments

Cognitive Skills. Cognitive skills were assessed using the IPAT Culture Fair Intelligence Test. This test measures individual intelligence in such a way as to reduce the influence of verbal fluency, cultural climate and educational level. The test contains four subtests which involve different tasks so that the measure of composite intelligence does not rely on a single scale. The subtests include series, classifications, matrices and topological conditions. Series requires that the test taker complete a sequence of four figures by choosing one from among five options. Classification requires the selection of the figure which differs from the others in a set of five. Matrices require the selection of a figure to correctly complete a 2x2 matrix. Finally, topological conditions requires that the examinee select from among five overlapping geometric figures the one in which one or two dots could be placed in order to fit the specifications of a model.

This test of cognitive skills was selected for two reasons. First, not all first term enlistees have well developed language skills which

is not a problem given the non-verbal nature of the CFIT. Second, according to Cattell (1973), this test is specifically designed to test mental adaptability in unfamiliar situations which makes it more readily generalizable to the behavioral skills required for the cross cultural adjustments imposed on American soldiers serving in Europe.

There are three versions of the CFIT. In this study, Scale 2 was used. The scale is designed for children 8-14 years of age and adults of average intelligence. The test is timed and takes a total of 12.5 minutes to complete.

The test has two forms, A and B, which are parallel and can be given separately. Form A was used as the pretest and Form B was used as the posttest.

For data analysis purposes, the raw scores were converted, using the tables provided in the technical supplement for the CFIT (1973), to normalized, standard score IQ with a mean of 100 and a standard deviation of 16.

Perceptual Skills. The perceptual skills test was an auditory memory test in which a series of numbers had to be recalled by the subject. Subjects heard 15 series of number sequences which were interrupted at random intervals. Subjects were then asked to recall as many of the numbers beginning from the last number given. The specific instructions were:

This is a test of perceptual skills. It consists of a series of numbers followed by a tone. Listen to the numbers and at the tone write down the last numbers you heard as far back as you can remember. You will have ten seconds to do this. After

the ten seconds another series of numbers will begin. Listen to them and do the same as for the first series of numbers. This procedure will continue through 15 sets of numbers. To illustrate this test, listen to the following example. Two, four, seven, nine, five, six (tone). At the tone you would write down as many of those numbers that you could remember. If you only remember the last number, write down the number "six" in the last blank on your answer sheet. If you remembered the last three numbers, write down "nine," "five," "six" in the last three blanks on your answer sheet. In the real test, each of the series of numbers all will be much longer than six. While listening to the series of numbers, you may not write anything on your answer sheet or elsewhere. If you are ready, let us begin with the first series of numbers.

Attitudes and Behaviors. The questionnaire items used in this study were part of the larger Soldier in Europe Survey which was designed to measure adaptation to USAREUR (see Orend, 1981). The overall questionnaire was developed and pretested during the summer of 1979 using a sample of 50 subjects who had the same selection criteria characteristics as the final target sample. During this pretest, both the initial interview and follow-up procedures and questionnaires were used. The objectives of the pretest were: (1) to test for interview time, low variance and redundant items, and items with high nonresponse; (2) to develop categories for open-ended items which needed to be shortened in order to create a questionnaire of acceptable length; and (3) to test the administration procedures to ensure that they provided a workable alternative to the time-consuming and expensive use of research assistants to collect data. The detailed results of the pretest are reported in an earlier paper (Orend, 1979).

In general, all systems appeared workable. The length of the initial questionnaire was established at about 50 minutes, on the average. Redundant and low variance items were discarded. In addition, it was found that unit action officers could be trusted to administer and return

surveys as requested. Pretest results also suggested that a wide variety of perspectives on Germany and the Army could be expected.

The subset of questionnaire items relevant to this study include the following categories:

1. interpersonal relationships with friends and dating behavior
2. off-duty activities including the use of recreational services and educational opportunities
3. attitudes towards Germany and German citizens
4. work relationships and attitudes towards work and the Army
5. problem areas including stress, use of drugs and alcohol and disciplinary problems
6. reenlistment/career intentions

Job Performance. Performance was measured by using evaluation forms completed by first line supervisors of the study participants at the same time the respondent was answering the survey questions on attitudes and behaviors. Supervisors were asked to evaluate subjects on 14 different performance items using a 1-7 Likert-type scale, ranging from (7) one of the best soldiers in this area that you have ever known to (1) completely unacceptable performance in this area; would remove individual from the job and Army if given the opportunity. The performance items were taken from the standard Enlisted Evaluation Reports (EER).

Results

Classification of soldiers into barracks isolates and non-isolates was made at both the six week administration of the questionnaire and again at the six month administration. In order to be designated as a

barracks isolate, the soldier and his/her supervisor had to agree that the soldier was an isolate. Similarly, both the soldier and the supervisor had to agree on the designation of non-isolate. Those soldiers for whom no agreement was obtained were excluded from data analysis. Specifically, this agreement took the following form to be designated a barracks isolate: the soldier had to report spending all or most off-duty time in the barracks, and the supervisor had to (1) report that the soldier spent most free time hanging around the barracks and (2) classify the soldier as a "barracks rat." To be designated as a non-isolate, the soldier had to report spending all or most off-duty time "on the economy" and the supervisor had to (1) report that the soldier did not spend most free time hanging around the barracks and (2) classify the soldier as not a "barracks rat." The number of soldiers classified as a barracks isolate of six weeks was 133. This represents 39% of the total number of soldiers who could be classified as an isolate or non-isolate. At six months, 41% or 159 of the soldiers who could be classified were designated as barracks isolates.

Cognitive Skills

The mean cognitive skill scores for soldiers classified as barracks isolates and non-isolates at six months on the pretest and the posttest are presented in Figure 1. The actual means and Anova results are presented in Table 1. Repeated measures analysis of variance using the isolation classification and the two times of measurement as factors indicated no main effects on isolation or time but did indicate a significant Time x Isolation interaction, $F(1, 137) = 3.87, p < .05$. Simple effects analysis using the Scheffe test with the alpha set at $p < .05$ indicated that there were no significant differences between isolates and non-isolates on the pretest ($F < 1$). As can be seen in Figure 1, barracks isolates scored significantly lower on the test of cognitive skills at the posttest than did non-isolates ($p < .05$).

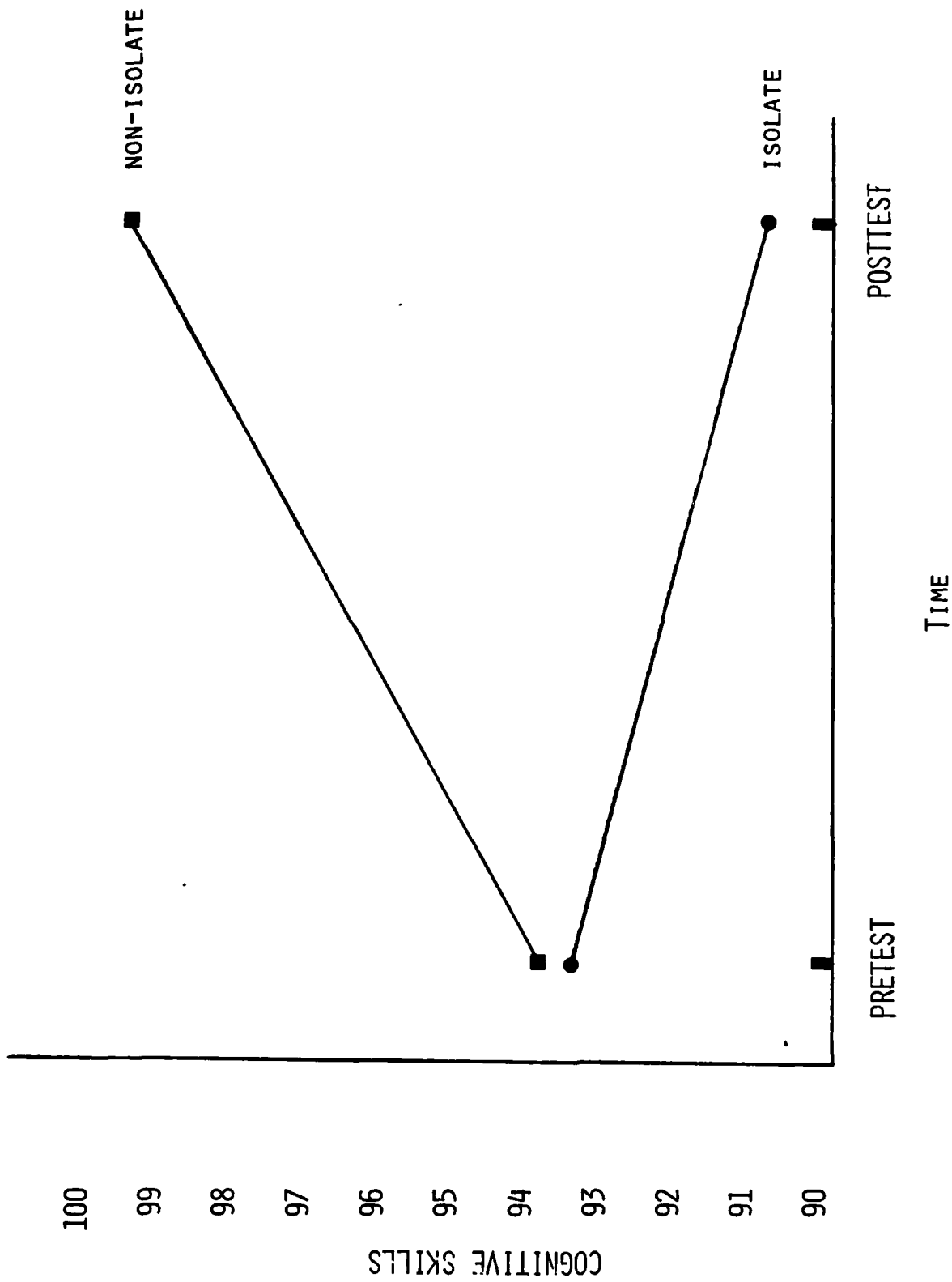


FIGURE 1: CHANGE IN COGNITIVE SKILL SCORES OVER TIME FOR SOLDIERS CLASSIFIED AS ISOLATES SIX MONTHS AFTER ARRIVAL

Table 1
Cognitive Skills at Arrival and Six Months
Means and Analysis of Variance

		<u>Pretest</u> <u>Arrival</u>	<u>Posttest</u> <u>Six Months</u>	
Isolate		93.4	92.7	
Non-Isolate		93.6	96.8	
<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>P</u>
Isolation	1	657.06	1.00	.32
Error	137	660.63		
Time	1	293.41	1.93	.17
I x T	1	548.5	3.87	.05
Error	137	141.8		

Not all individuals classified as isolates at six months had been that way during the entire period. Some soldiers showed isolation behaviors as early as six weeks and maintained these behaviors through the entire six months. Other soldiers showed early isolation behaviors but did not persist in that manner. Conversely, some soldiers developed isolation behavior after six weeks and some never developed such behaviors. Figure 2 presents the cognitive skill scores for each of these groups on the pretest and the posttest. The means and analysis of variance summary is contained in Table 2.

Repeated measures analysis of variance indicated no main effects of time on isolation but a significant Time x Isolation interaction, $F(3, 81) = 2.80$, $p < .05$. Simple effects analysis indicated no difference between the four categories of isolation on the pretest ($F < 1$) but a significant difference on the posttest, $F = 3.00$, $p = .03$. As can be seen in Figure 2, individuals who were consistently non-isolates showed an improvement in IQ scores over time while consistent isolates showed a corresponding decline. Soldiers who experienced lesser degrees of isolation (first 6 weeks only or 6 weeks to 6 months only) showed no significant increases or decreases in IQ.

Perceptual Skills

Table 3 presents the means and analysis of variance summary for the perceptual skills test. Repeated measures analysis of variance indicated a significant main effect of time on mean perceptual skill scores, $F(1, 85) = 6.05$, $p < .02$. No effects of isolation were obtained at either the pretest, $F(1, 96) = 1.59$, $p = \text{n.s.}$ or at the posttest, ($F < 1$). In general, soldiers' perceptual skills improved with time. Analysis of variance using the 6 week and 6 month classifications also indicated only a main effect of time, $F(1, 97) = 5.81$, $p < .02$, and no effects of isolation at either the pretest, $F(3, 76) = 1.76$, $p = \text{n.s.}$ or posttest, $F(3, 92) = 1.82$, $p = \text{n.s.}$ Table 4 presents these means and analysis of variance summary.

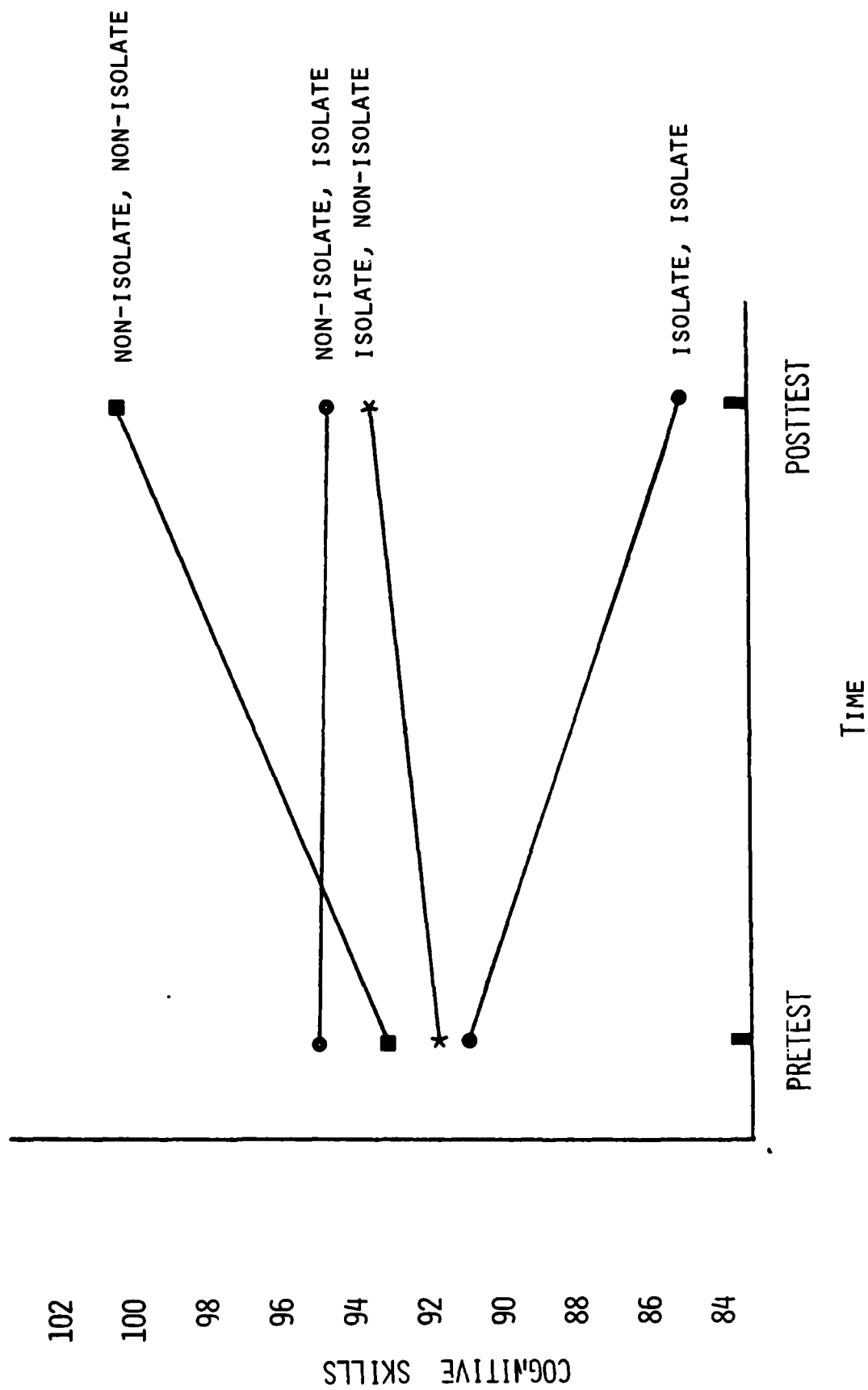


FIGURE 2: CHANGE IN COGNITIVE SKILLS OVER TIME FOR SOLDIERS CLASSIFIED AS BARRACKS ISOLATES AT 6 WEEKS AND 6 MONTHS

Table 2
Cognitive Skills at Arrival and Six Months
For Soldiers Classified As Isolates Of
Six Weeks and Six Months

Condition		<u>Pretest</u>	<u>Posttest</u>
<u>6 Weeks</u>	<u>6 Months</u>		
Isolate, Isolate		92.7	86.1
Non-Isolate, Isolate		95.7	94.5
Isolate, Non-Isolate		90.4	92.1
Non-Isolate, Non-Isolate		94.6	100.92

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>P</u>
Isolation	3	1183.01	1.82	.15
Error	81	649.4		
Time	1	329.3	2.19	.14
I x T	3	420.8	2.80	.05
Error	81	150.3		

Table 3
Perceptual Skills at Arrival and Six Months
For Isolates And Non-Isolates

		<u>Pretest</u>	<u>Posttest</u>	
Isolate		45.62	47.78	
Non-Isolate		49.28	51.68	

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>P</u>
Isolation (I)	1	1213.6	2.26	.14
Error	85	537.5		
Time (T)	1	463.4	6.05	.02
I x T	1	1.20	.02	.90
Error	85	76.58		

Table 4
 Perceptual Skills At Arrival and Six Months
 For Soldiers Classified As Isolates
 And Non-Isolates At Six Weeks and Six Months

Condition		<u>Pretest</u>	<u>Posttest</u>
<u>6 Weeks</u>	<u>6 Months</u>		
Isolate, Isolate		44.5	48.7
Non-Isolate, Isolate		45.0	48.8
Isolate, Non-Isolate		46.7	47.7
Non-Isolate, Non-Isolate		50.3	53.4

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>P</u>
Isolation	3	411.1	.59	.63
Error	45	711.5		
Time	1	469.4	5.81	.02
I x T	3	17.9	.22	.88
Error	45	80.8		

Job Performance

The 14 job performance items were combined into a composite job evaluation rating. Repeated measures analysis of variance on this composite rating indicated a significant effect of time, a significant effect of isolation, and a Time x Isolation interaction. Table 5 contains the means and analysis of variance summary information for the composite performance scores. Soldiers' performance ratings were higher at six weeks ($\bar{X} = 51.73$) than at six months ($\bar{X} = 48.33$). Non-isolates had higher ratings (54.68) than did isolates (47.38) and the ratings of isolates showed a greater decline over time ($- 5.40$) than did the ratings of non-isolates ($- 1.39$).

One-way analyses of variance were conducted on each of the 14 evaluation ratings of isolates and non-isolates. Table 6 presents the mean evaluation ratings of isolates and non-isolates based on the six month classification. The significance of the difference between the means is also indicated in Table 6. As can be seen on twelve of the fourteen indices, barracks isolates were rated lower than non-isolates. Analyses of variance were also performed on these same 14 evaluation indices at the six weeks administration. On those items marked with a "+", barracks isolates were rated significantly lower than non-isolates at the six week administration. Thus, by six weeks, isolates received lower ratings on "willingness to learn new things", $F(1, 367) = 4.32$, $p < .05$, "works well without supervision", $F(1, 367) = 8.62$, $p < .01$, "is interested in Army job", $F(1, 367) = 4.73$, $p < .05$, and "works well as part of the team", $F(1, 367) = 4.11$, $p < .05$. By six months, barracks isolates were rated significantly lower on an additional eight performance indices.

Attitudes and Behavior

Off-duty Activities. Participants were asked to indicate how much time they spent engaged in twelve off-duty activities on a four-point scale ranging from (1) spent most time to (4) spent no time. Table 7 presents the mean frequency ratings for isolates and non-isolates at the initial administration,

Table 5
Performance Ratings Of Isolates and Non-Isolates
At Six Weeks And Six Months

	<u>6 Weeks</u>	<u>6 Months</u>	<u>Difference</u>
Isolate	50.08	44.68	-5.40
Non-Isolate	53.37	51.98	-1.39

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>P</u>
Isolation (I)	1	8350.2	10.4	.001
Error	303	805.1		
Time (T)	1	2876.9	9.8	.01
I x T	1	1199.4	4.1	.05
Error	303	293.7		

Table 6
Mean Evaluation Ratings of Barracks Isolates and
Non-Isolates at Six Months

<u>Performance Indicator</u>	<u>Isolate</u>	<u>Non-Isolate</u>	<u>F</u>	<u>Sig.</u>
Willing to learn new things	4.50	4.79	3.75	.05+
Knows how to do the job	4.20	4.66	11.87	.001
Works well without supervision	4.06	4.59	9.79	.002+
Does tasks that need to be done without being told	3.77	4.38	13.43	.001
Tries to learn new things on his/her own	3.98	4.51	10.97	.001
Is interested in Army job	4.08	4.54	8.07	.005+
Gets along with fellow soldiers	4.61	5.07	11.30	.001
Gets along with supervisor	4.65	4.93	3.42	.07
Follows orders readily without discussion	4.35	4.62	2.46	.12
Can be trusted to complete job on his/her own	4.28	4.74	6.53	.01
Does job effectively	4.23	4.70	9.56	.002
Works well as part of the team	4.60	4.84	8.23	.004+
Shows loyalty to the unit	4.11	4.71	13.95	.001
Would want this person with me in combat	4.17	4.73	8.13	.005

Note. 7 = Best to 1 = Unacceptable
+ Significantly different at 6 weeks

Table 7

Mean Frequency of Participation in Selected Off-Duty
Activities for Isolates and Non-isolates

<u>Off-duty Activities</u>		<u>Prior to Enlistment</u>	<u>After Six Weeks</u>	<u>After Six Months</u>
Playing or watching sports	Isolate	2.75	2.38	2.56
	Non-isolate	2.93	2.60	2.51
Watching T.V.	Isolate	2.56	2.73	2.77
	Non-isolate	2.47	2.57	2.50
Going out on dates	Isolate	3.06	1.72	1.92
	Non-isolate	3.19	2.11	2.67
Doing hobbies	Isolate	2.32	1.66	1.71
	Non-isolate	2.28	1.69	1.88
Just hanging around	Isolate	2.85	2.72	2.90
	Non-isolate	2.76	2.77	2.69
Going to movies	Isolate	2.21	2.52	2.62
	Non-isolate	2.32	2.61	2.58
Going to museums/ cultural activities	Isolate	1.72	1.43	1.55
	Non-isolate	1.74	1.55	1.79
Listening, playing, dancing to music	Isolate	3.16	3.01	2.97
	Non-isolate	3.28	3.05	3.20
Reading	Isolate	2.44	2.36	2.28
	Non-isolate	2.35	2.32	2.20
Doing drugs or drinking	Isolate		2.03	2.18
	Non-isolate		1.83	1.87
Travel	Isolate		1.73	1.87
	Non-isolate		1.87	2.22
Daydreaming, thinking	Isolate	0.00	3.01	3.08
	Non-isolate	0.00	2.94	2.76

Note. 4 = Spent much time to 1 = Spent no time

the six-week follow-up and the six-month follow-up. The initial administration asked the respondent to rate how much time was spent on each activity prior to entry into the service. The follow-up asked for frequency ratings during the period between the previous administration and the current one.

Analysis of variance indicated that barracks isolates spent somewhat less time playing or watching sports than non-isolates prior to entry into the service, $F(1, 384) = 3.45$, $p < .07$. By six weeks, isolates reported significantly less sports activity than did non-isolates, $F(1, 387) = 6.26$, $p < .02$. However, this difference did not persist to the six months administration, $F < 1$, $p = n.s.$

No differences were obtained between barracks isolates and non-isolates on the time spent watching television prior to entry into the service, $F(1, 374) = 1.01$, $p = n.s.$ However, isolates reported watching significantly more television after six weeks in USAREUR, $F(1, 382) = 4.69$, $p < .05$, and this difference was even greater at six months, $F(1, 359) = 9.67$, $p < .01$.

Analysis of variance indicated no significant differences in frequency of dating between isolates and non-isolates prior to entry into the service. However, non-isolates reported significantly more time spent dating than did isolates after six weeks, $F(1, 382) = 14.94$, $p < .001$, and even more time dating after six months, $F(1, 358) = 49.12$, $p < .001$.

Isolates and non-isolates did not differ prior to entry into the service or after six weeks in USAREUR on the amount of time spent doing hobbies ($F < 1$). Isolates did report somewhat less hobby activity after six months in USAREUR, $F(1, 356) = 2.88$, $p < .09$. Similarly, isolates did not differ from non-isolates on the amount of time spent "just hanging around with friends" prior to entry into the service or after

six weeks in USAREUR ($F < 1$). After six months, isolates reported significantly more time spent "hanging around" than did non-isolates, $F(1, 361) = 4.99, p < .05$. No significant differences were found between isolates and non-isolates on the time spent going to movies, $F < 1$.

Time spent going to museums and cultural activities was not different for isolates and non-isolates prior to entry into the service or after six weeks in USAREUR ($F < 1$). After six months in USAREUR, non-isolates reported significantly more time devoted to such activities than did isolates, $F(1, 356) = 8.14, p < .01$.

Analysis of variance indicated no significant differences between isolates and non-isolates on time spent in musical activities either prior to entry into the service, $F(1, 380) = 1.62, p = ns$, or after six weeks in USAREUR ($F < 1$). However, after six months, non-isolates reported significantly more time spent in musical activities than did isolates, $F(1, 359) = 6.36, p < .02$. No differences between isolates and non-isolates were obtained on the time spent reading.

On the last three categories, no data were obtained on time spent prior to entry into the service. However, frequency ratings were obtained on the six weeks and six months surveys. Barracks isolates reported somewhat more time spent doing drugs/drinking than did non-isolates at six weeks, $F(1, 382) = 3.72, p < .06$, and significantly more time spent doing drugs/drinking at six months, $F(1, 358) = 9.68, p < .01$.

Analysis of variance indicated that barracks isolates spent significantly less time traveling both after six weeks, $F(1, 382) = 14.94, p < .001$, and after six months in USAREUR, $F(1, 357) = 15.59, p < .001$.

Finally, after six months in USAREUR, but not before, barracks isolates reported significantly more time spent "daydreaming, thinking about home, just thinking" than did non-isolates, $F(1, 358) = 9.98$, $p < .01$.

Some off duty activities involve the use of recreational services provided by the U.S. Army in Europe. Table 8 presents the mean frequency rating given by barracks isolates and non-isolates to how often they utilize five such services. These ratings were done on a Likert scale ranging from (4) a lot to (1) not at all.

Analysis of variance indicated no significant difference between isolates and non-isolates in the use of the post gym at six weeks, $F(1, 374) = 1.04$, $p = n.s.$ However, non-isolates reported using the gym significantly more often than did isolates after six months in USAREUR, $F(1, 343) = 4.87$, $p < .03$.

Similarly, isolates did not differ from non-isolates in how often they used the recreational center during the first six weeks ($F(1, 371) = 2.01$, $p = n.s.$ However, by six months non-isolates reported significantly more use of the recreation center than did isolates, $F(1, 340) = 4.26$, $p < .05$.

No significant differences were obtained between isolates and non-isolates in the use of craft/auto shops or EM clubs at either six weeks or six months ($F < 1$). However, non-isolates did show a tendency to use the Armed Forces Recreation Center more often than non-isolates after six months in USAREUR, $F(1, 293) = 1.97$, $p < .16$.

A number of things can prevent soldiers from effectively using their off-duty time. Table 9 compares the responses of isolates and non-isolates

Table 8

Mean Frequency of Use of Recreational Services
by Barracks Isolates and Non-Isolates

<u>Use of</u>		<u>After 6 Weeks</u>	<u>After Six Months</u>
Post Gym	Isolate	2.34	2.33
	Non-isolate	2.45	2.57
Recreation Center	Isolate	2.39	2.27
	Non-isolate	2.53	2.48
Craft/Auto Shop	Isolate	1.32	1.52
	Non-isolate	1.34	1.42
EM Club	Isolate	2.09	2.22
	Non-isolate	2.19	2.29
AFRC	Isolate	2.26	2.26
	Non-isolate	2.24	2.36

Note. 4 = A lot to 1 = Not at all

Table 9
Mean Seriousness Ratings of Problems Encountered
by Isolates and Non-Isolates in Using
Off-Duty Time

<u>Problem Area</u>		<u>After 6 Weeks</u>		<u>After 6 Months</u>	
		\bar{X}	Test	\bar{X}	Test
Getting time off	Isolate	1.82	$\frac{F}{p} < 1$	2.13	$\frac{F}{p} < 1$
	Non-isolate	1.87	$\frac{p}{p} = n.s.$	2.17	$\frac{p}{p} = n.s.$
Finding interesting places to go	Isolate	1.93	$\frac{F}{p} = 4.76$	1.83	$\frac{F}{p} = 2.49$
	Non-isolate	1.75	$\frac{p}{p} < .03$	1.71	$\frac{p}{p} < .11$
Finding things I liked to do in U.S.	Isolate	2.43	$\frac{F}{p} = 7.46$	2.38	$\frac{F}{p} = 7.43$
	Non-isolate	2.21	$\frac{p}{p} < .01$	2.16	$\frac{p}{p} < .01$
Talking to Germans	Isolate	2.46	$\frac{F}{p} = 9.04$	2.38	$\frac{F}{p} = 3.96$
	Non-isolate	2.26	$\frac{p}{p} < .01$	2.24	$\frac{p}{p} < .05$
Getting to know opposite sex	Isolate	2.13	$\frac{F}{p} = 21.05$	2.04	$\frac{F}{p} = 20.75$
	Non-isolate	1.76	$\frac{p}{p} < .001$	1.66	$\frac{p}{p} < .001$
Affording things to do	Isolate	2.24	$\frac{F}{p} < 1$	2.38	$\frac{F}{p} < 1$
	Non-isolate	2.22	$\frac{p}{p} = n.s.$	2.41	$\frac{p}{p} = n.s.$

Note. 3 = Serious problem to 1 = No problem

to the seriousness (for them) of six potential problem areas. These ratings were made on a Likert-type scale ranging from (3) serious problem to (1) no problem. These ratings were made at six weeks and at six months. Analysis of variance indicated that finding interesting places to go, finding things to do that the soldier likes to do in the U.S., and talking to German people, getting to know members of the opposite sex are significantly more serious problems for the isolate than for the non-isolate. No differences were obtained between isolates and non-isolates on "getting time off" or on "being able to afford things." The F statistics and probabilities are also presented in Table 9.

In addition to the soldiers' responses to the questionnaire items on off-duty time, supervisors were asked to rate the soldiers' participation in recreation programs and their ability to get along on the German economy. Those ratings were made on Likert-type scales ranging from (3) very true to (1) very untrue. Analysis of variance indicated that barracks isolates received lower ratings on sports participation at both six weeks and six months and also lower ratings of "ability to get along on the German economy" at both six weeks and six months. These means and F tests are presented in Table 10.

Interpersonal Relations. Soldiers and supervisors provided information on the interpersonal relations of the soldier in both social and work situations. Table 11 presents the data provided by the soldier regarding off-duty relations. Soldiers rated the number of good friends they had on a Likert-type scale ranging from (3) many good friends to (1) no really good friends. Analysis of variance indicated that no

Table 10
Mean Supervisors' Ratings of Isolates and Non-Isolates
on Participating in Off-Duty Activities

<u>Off-Duty Activities</u>		<u>After 6 Weeks</u>		<u>After 6 Months</u>	
		\bar{X}	Test	\bar{X}	Test
Participates in recreation	Isolate	2.97	$F = 3.65$	3.05	$F = 3.72$
	Non-isolate	3.21	$\underline{p} < .05$	3.32	$\underline{p} < .05$
Can get along on German economy	Isolate	2.69	$F = 7.95$	2.64	$F = 52.14$
	Non-isolate	3.02	$\underline{p} < .01$	3.51	$\underline{p} < .001$

Note. 1 = Very true to 5 = Very untrue

Table 11
Soldiers' Ratings of Interpersonal Relationships

<u>Interpersonal Relations Indicators</u>		<u>Prior to Enlistment</u>	<u>After Six Weeks</u>	<u>After Six Months</u>
Number of friends	Isolate	2.47	1.97	1.98
	Non-isolate	2.49	2.18	2.16
Number of acquaintances for spare-time activities	Isolate	2.77	2.65	2.58
	Non-isolate	2.81	2.93	3.02
Number of dates	Isolate	2.56	2.10	2.14
	Non-isolate	2.49	2.30	2.58

differences existed between isolates and non-isolates on the number of good friends prior to entry into the service ($F < 1$). Six weeks after entry into USAREUR barracks isolates reported significantly fewer good friends than did non-isolates, $F(1, 387) = 11.19, p < .001$. This difference remained significant after six months in USAREUR, $F(1, 338) = 6.66, p < .01$.

Respondents, also indicated who they spent their spare time with on a Likert-type scale ranging from (4) a number of friends to (1) alone. Analysis of variance indicated that no difference existed between isolates and non-isolates prior to entry into the service ($F < 1$). By six weeks, isolates reported doing things with fewer friends than did non-isolates, $F(1, 394) = 6.65, p < .01$. This difference was even more significant by six months, $F(1, 336) = 20.35, p < .001$.

The question on frequency of dates asked respondents to note their dating behavior on a Likert-type scale ranging from (1) once a year or less to (6) two or more times a week. Analysis of variance of the mean ratings indicated that no differences existed between isolates and non-isolates prior to entry into the service, ($F < 1$). Dating behavior was somewhat more frequent for non-isolates after six weeks, $F(1, 388) = 1.69, p < .20$ and significantly more frequent after six months, $F(1, 341) = 8.18, p < .01$.

Supervisors also provided two ratings which bear on the interpersonal relations of the soldiers. Supervisors rated whether the soldier was "well liked" and "has many friends" on a five point scale ranging from (5) very true to (1) very untrue. Table 12 presents these

Table 12
Supervisors' Mean Ratings of Soldiers' Interpersonal Relations

<u>Interpersonal Relations Indicators</u>		<u>After Six Weeks</u>	<u>After Six Months</u>
Has many friends	Isolate	3.42	3.40
	Non-isolate	3.68	3.98
Is well liked	Isolate	3.53	3.51
	Non-isolate	3.76	3.81

Note. 5 = Very true to 1 = Very untrue

means. Analysis of variance indicated that barracks isolates have fewer friends at both six weeks, $F(1, 363) = 5.54, p < .02$ and six months, $F(1, 340) = 29.35, p < .001$. Also barracks isolates are less well liked at both six weeks, $F(1, 360) = 4.71, p < .03$ and six months, $F(1, 341) = 7.10, p < .01$.

Soldiers were asked three questions about their work relationships. These questions examined the extent of trouble with fellow soldiers, NCOs and officers and each was accompanied by a three-point scale ranging from (3) yes, a good deal to (1) no, not really. Table 13 presents these means. Analysis of variance indicated that isolates reported somewhat more trouble getting along with fellow soldiers at six weeks, $F(1, 386) = 3.21, p < .07$ but not at six months ($F < 1$). Isolates also reported more trouble getting along with NCOs at six weeks, $F(1, 361) = 7.79, p < .01$ and at six months, $F(1, 349) = 7.49, p < .01$. No differences were found between isolates and non-isolates on their troubles getting along with officers at six weeks ($F < 1$). However, by six months, isolates reported more trouble than did non-isolates in getting along with officers, $F(1, 338) = 6.70, p < .01$.

Supervisors were also asked to respond to three questions regarding work relations: "gets along with fellow soldiers," "has run-ins with other soldiers" and "gets along with supervisor." Each of these questions was accompanied by a five point scale ranging from (5) very true to (1) very untrue. Analysis of variance indicated that isolates are reported to have somewhat more trouble getting along with fellow soldiers by six weeks, $F(1, 366) = 2.77, p < .09$ and significantly more trouble by six

Table 13
Soldiers' Mean Ratings of Work Relations

<u>Work Relations Indicators</u>		<u>After Six Weeks</u>	<u>After Six Weeks</u>
Gets along with fellow soldiers	Isolate	1.52	1.46
	Non-isolate	1.40	1.43
Gets along with NCOs	Isolate	1.51	1.75
	Non-isolate	1.32	1.54
Gets along with officers	Isolate	1.23	1.36
	Non-isolate	1.21	1.21

Note. 3 = Yes, a great deal to 1 = No, not really

months $F(1, 342) = 11.29, p < .001$. On the other hand, supervisors reported that isolates were significantly less likely to have run-ins with other soldiers than non-isolates at six weeks, $F(1, 363) = 5.54, p < .02$ and somewhat less likely at six months, $F(1, 339) = 3.13, p < .07$. No differences were reported between isolates and non-isolates on their ability to get along with their supervisor of six weeks, ($F < 1$). However, by six months there was a marginally significant difference which indicated that isolates were somewhat more likely to have trouble getting along with supervisors than were non-isolates, $F(1, 342) = 3.42, p < .07$ (see Table 14).

Attitudes towards Germans and Germany. Attitudes towards Germans was assessed using a ten-item semantic differential with (7) representing positive evaluation to (1) representing negative evaluation. The initial questionnaire asked for soldiers' expectations about Germans. Subsequent versions asked about their current opinions. Analysis of variance indicated no significant difference between isolates and non-isolates on any of the items at either the initial testing or at the six weeks administration. Differences did begin to appear between isolates and non-isolates at the six month administration. Isolates rated Germans as significantly more "bad" ($X = 4.42$) than did non-isolates ($X = 4.76$), $F(1, 336) = 9.75, p < .025$. Also, isolates rated Germans somewhat less generous ($X = 3.81$) than did non-isolates ($X = 4.42$), $F(1, 338) = 4.31, p < .15$ and somewhat less honest ($X = 4.19$) than did non-isolates ($X = 3.54$) $F(1, 336) = 2.96, p < .09$. No significant difference was found between isolates and non-isolates on how much they expected to like

Table 14
Supervisors' Mean Rating of Soldiers' Work Relations

<u>Work Relations Indicators</u>		<u>After 6 Weeks</u>	<u>After 6 Months</u>
Gets along with fellow soldiers	Isolate	2.94	2.62
	Non-isolate	3.14	3.07
Run-ins with other soldiers	Isolate	3.42	2.38
	Non-isolate	3.68	2.14
Gets along with supervisor	Isolate	3.05	2.65
	Non-isolate	3.16	2.93

Note. 5 = Very true to 1 = Very untrue

Germany (1 = Very much to 5 = not at all) ($F < 1$). However, after six weeks in country, isolates reported liking Germany significantly less ($X = 4.51$) than did non-isolates ($X = 4.21$) $F(1, 382) = 5.13$, $p < .025$. By six months, the difference between isolates ($X = 4.47$) and non-isolates ($X = 4.96$) was even greater, $F(1, 347) = 15.39$, $p < .001$.

Attitudes towards the Army and work. Participants were asked how they felt about being in the Army on a five-point scale ranging from (5) Very Positive to (1) Very Negative. Isolates did not differ from non-isolates at either the initial or six week administration. However, at six months isolates were significantly more negative about the Army ($X = 2.56$) than were non-isolates ($X = 2.91$) $F(1, 331) = 7.89$, $p < .01$.

Participants were also asked how important they were to their platoon (5 = Very Important, 1 = Unimportant) and how much they cared about doing a good job (4 = A lot to 1 = Not at all). Analysis of variance indicated no difference between isolates and non-isolates on "importance to the platoon" at six weeks. At six months, isolates rated themselves as less important ($X = 3.55$) than did non-isolates ($X = 3.98$) $F(1, 340) = 11.09$, $p < .01$.

Isolates reported themselves as caring somewhat less ($X = 3.47$) than non-isolates ($X = 3.61$) about doing a good job, $F(1, 384) = 3.18$, $p < .08$. By six months, isolates cared significantly less ($X = 3.25$) than did non-isolates ($X = 3.63$) $F(1, 346) = 20.19$, $p < .001$.

Problem Areas. Participants responded to a 15-item subjective stress scale which asked for how they were feeling at the time of administration. The scale ranged from (1) Wonderful to (15) Scared Stiff.

Analysis of variance indicated no differences between isolates ($X = 7.51$) and non-isolates ($X = 6.70$) at the initial testing, $F(1, 404) = 1.85$, $p = n.s.$ Six weeks after arrival, isolates reported significantly more stress ($X = 6.98$) than did non-isolates ($X = 6.15$), $F(1, 368) = 5.92$, $p < .02$. By six months the difference between isolates ($X = 7.68$) and non-isolates ($X = 5.91$) was even more pronounced, $F(1, 339) = 22.42$, $p < .01$.

Participants indicated their alcohol and drug use on comparative items which ranged from (1) use much less than before to (5) use much more than before. All respondents reported using drugs a little less since coming to their unit than they did prior to joining the Army. The decline in drug use by isolates was somewhat less ($X = 2.64$) than it was for non-isolates ($X = 2.38$) $F(1, 369) = 2.37$, $p < .13$ at six weeks and significantly less at six months ($X = 2.78$) than non-isolates ($X = 2.37$) $F(1, 344) = 4.41$, $p < .05$. No significant differences were reported between isolates and non-isolates on the relative use of alcohol although isolates reported somewhat more alcohol use ($X = 3.95$) since joining their units than did non-isolates ($X = 3.72$), $F(1, 351) = 1.58$, $p < .20$.

Supervisors' ratings of "uses drugs" and "drinks a lot" were made on a five-point scale, ranging from (5) Very true about the soldier to (1) Very untrue. These findings paralleled the self-report findings.

Specifically, supervisors reported somewhat greater drug use by isolates ($X = 1.81$) at six weeks than by non-isolates ($X = 1.67$), $F(1, 361) = 2.74$, $p < .10$. At six months, isolates are reported as using significantly more drugs ($X = 2.18$) than are non-isolates ($X = 1.75$), $F(1, 337) = 3.88$, $p < .05$.

No significant difference was obtained on supervisors' ratings of alcohol use at six weeks between isolates ($X = 2.12$) and non-isolates ($X = 2.01$) $F < 1$. However, isolates were reported as more frequent drinkers ($X = 2.46$) than were non-isolates ($X = 2.18$) at the six month administration, $F (1, 341) = 4.59, p < .05$.

Retention Decisions. Three questions were posed to the participants about retention. The first asked those respondents who had rated the Army as "worse" or "much worse" than expected whether they would complete their tour. This scale ranged from (1) definitely complete to (5) definitely leave early. Similarly, the reenlistment and career intention questions were accompanied by Likert-type scales ranging from (1) definitely reenlist/make the Army a career to (5) definitely won't reenlist/make the Army a career.

Analysis of variance indicated no difference between isolates and non-isolates on their intention to complete their tour on the six weeks administration. However, isolates who were unhappy with the Army were much more likely to report planning to leave early ($X = 1.95$) than were unhappy non-isolates ($X = 1.51$), $F (1, 180) = 10.36, p < .002$ by six months in USAREUR.

Figure 3 presents the data on reenlistment intentions. Analysis of variance indicated no difference between isolates and non-isolates at the initial administration. At six weeks, isolates indicated less likelihood of reenlisting than did non-isolates, $F (1, 383) = 3.66, p < .05$. These differences were also found at six months, $F (1, 345) = 4.58, p < .05$.

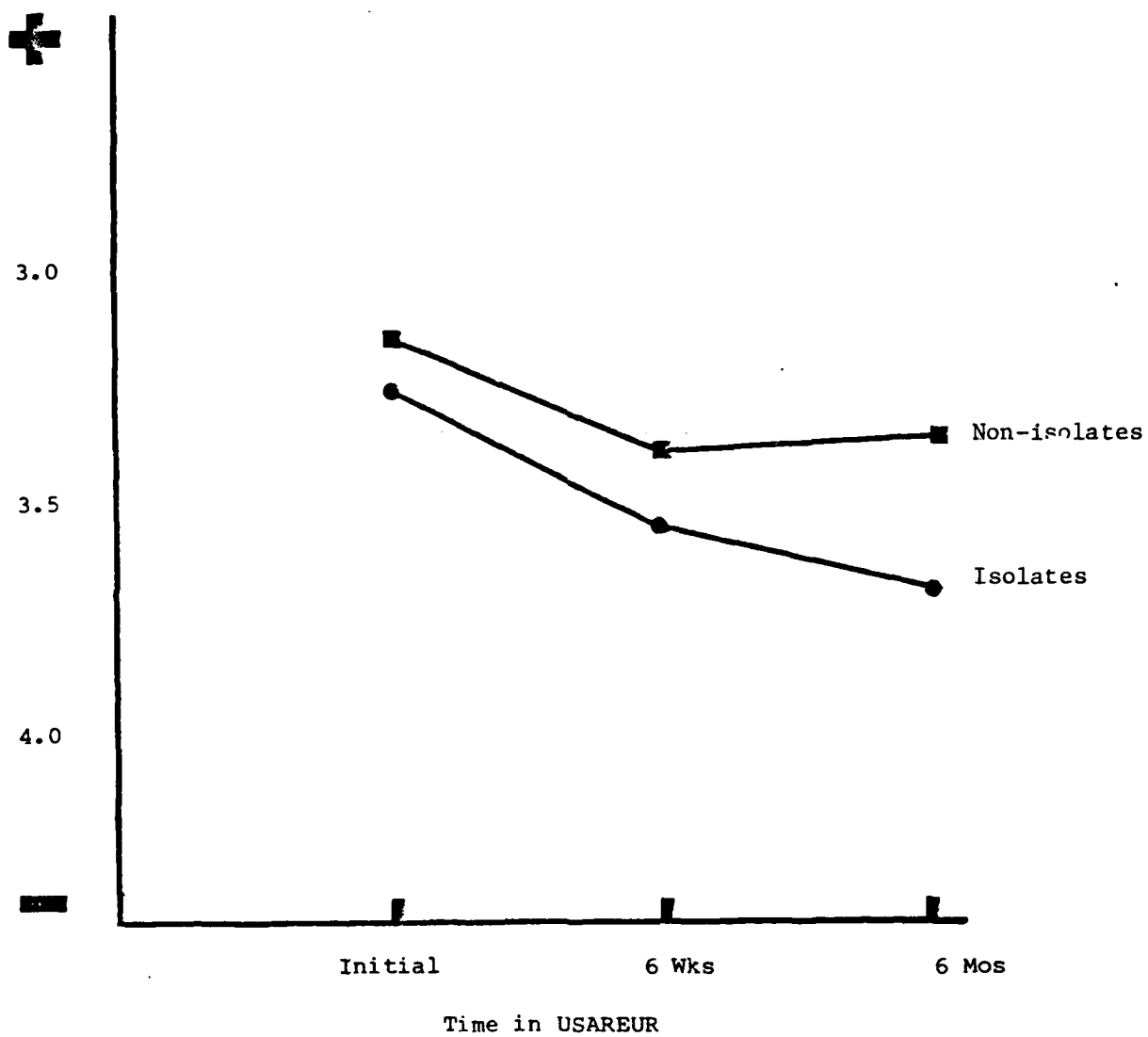


Figure 3: Re-enlistment Intentions

Figure 4 presents the data on career intentions. No significant differences were found between isolates and non-isolates on the initial questionnaire or after six weeks in USAREUR, $F(1, 380) = 1.37, p < .24$. By six months, isolates reported less likelihood of making the Army a career than did non-isolates, $F(1, 347) = 4.29, p < .05$.

Discussion

Isolation and Performance

Three types of performance measures were collected on the participants in this study. These were cognitive skills as measured by the Culture Fair IQ test, perceptual skills as measured by an auditory memory test, and job skills as measured by supervisors' ratings.

The results indicated that the cognitive skill scores of soldiers who experienced barracks isolation differed significantly from those of the non-isolates. These differences did not exist prior to the soldiers' entry into USAREUR units. However, it is not entirely clear whether the IQ scores of the isolates declined or the scores of the non-isolates increased or that the differences are largely a matter of low test-retest reliability. With regard to test-retest reliability, the technical supplement to the CFIT indicates test-retest reliability coefficients compare quite favorably to other tests of cognitive abilities like the Scholastic Aptitude Test, Miller-Analogies Test, Herman-Nelson, etc. (see Burns, 1965)

The notion that the cognitive skills as tested in the CFIT of non-isolates would increase has a great deal of merit. Non-isolates are by definition those individuals willing to seek out novel experiences, to

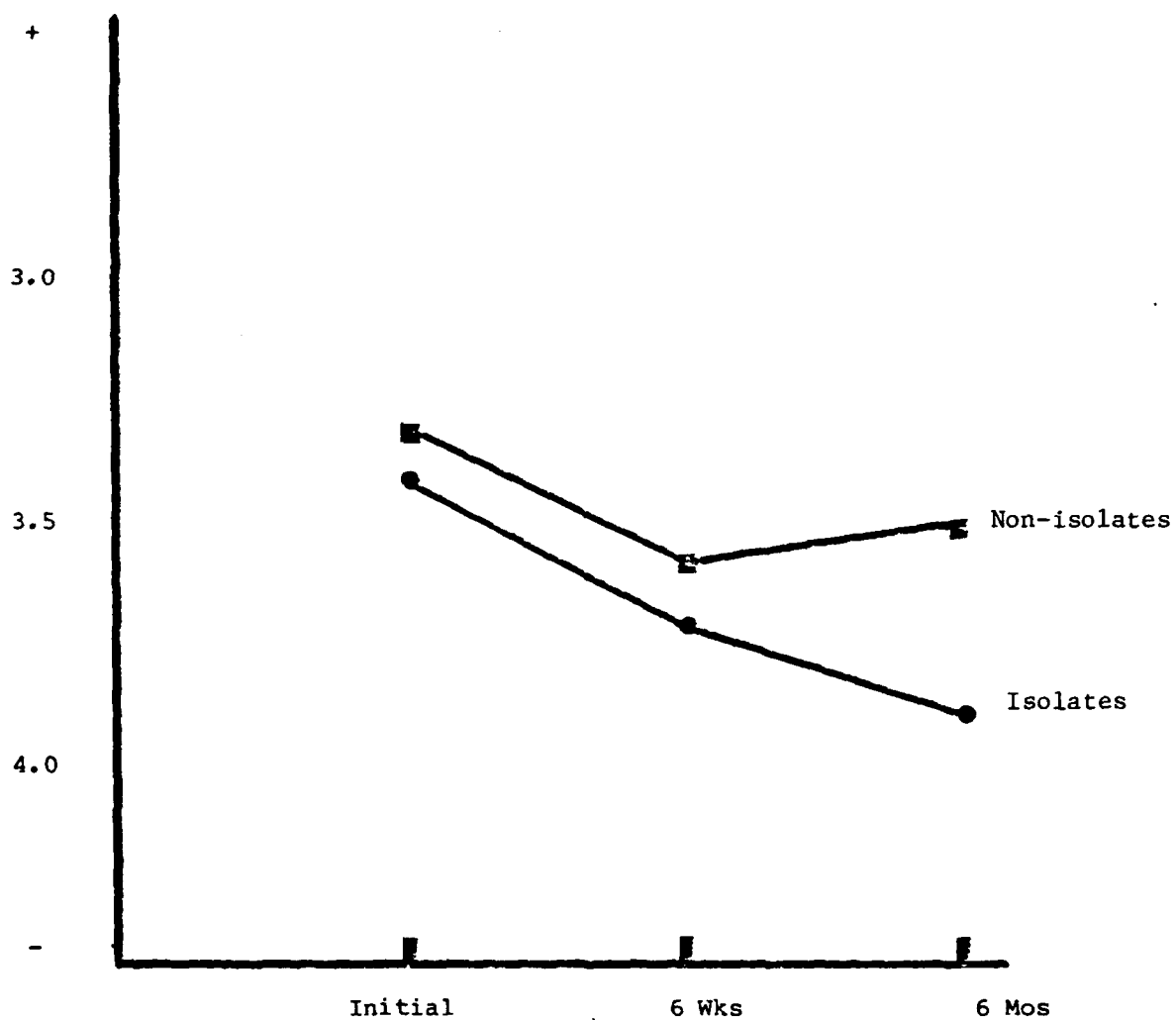


Figure 4: Army Career Intentions .

explore an unfamiliar environment. Similarly, the CFIT with its set of items presents the individual with a novel set of problems to solve. It would seem likely that those individuals willing to try out new behavioral experiences might also be more willing to try out new cognitive experiences.

The idea that the data demonstrate a decline in the skill level of isolates is supported in two ways. First, prior to initiating this study, the Culture Fair Intelligence Test was pretested on twenty soldiers. Form A was given first, followed two weeks later by Form B. It was found that, in general, IQ scores were higher on Form B (posttest) than on Form A (pretest). This finding is consistent with the scoring tables in the CFIT manual which require a 1-2 point higher score on Form B in order to achieve an equivalent IQ score calibrated on Form A alone. Thus, what appears to be an increase in the IQ of non-isolates may be mainly a result of familiarity with the unique nature of this test. Therefore, it may be that the decline in IQ exhibited by barracks isolates is, in fact, somewhat more severe than Figure 1 would suggest and the increase in the IQ of non-isolates somewhat less dramatic. Also a decline in cognitive skills (IQ) is consistent with the findings observed in artificially isolated environments, as well as wintering-over experiences in Antarctica and is thought by some to have a physiological basis in alpha-wave rhythms (see Zubek, 1969). That the extent of cognitive skill decrement was directly related to the extent of isolation can be seen in Figure 2. Thus, consistent isolation throughout the first six months was

associated with the most significant declines in IQ.

Interestingly, not all skills declined with isolation. Perceptual skills showed an improvement over time for isolates as well as non-isolates. Since this test was administered at the same time as the cognitive skills test, it suggests that the results of the cognitive skill testing were not simply a product of lower task motivation among isolates.

The results indicated that barracks isolates performed less well on the job than did non-isolates across a series of evaluation criteria provided by the soldiers' supervisors. Of course, job performance may be directly related to isolation or could be a product of other factors only tangentially related to isolation. However, isolation is strongly implicated since those factors which distinguished initially between isolates and non-isolates are the very attributes associated with isolation experiences in previous studies, i.e., lack of initiative and responsiveness to others. Illustrative of this point, Maddi, Charlens, Maddi and Smith (1962) have suggested that while monotonous experiences may arouse a need for variation, they can also decrease the individual's ability to think in an active, initiating manner.

Attitudes and Behaviors of Barracks Isolates

Barracks isolates differ from their non-isolationist counter-parts on a number of dimensions. Most of the differences do not exist prior to entry into USAREUR; some appear as early as six weeks after arrival, while others are not evident until later.

After six weeks, three trends appear in the behavioral patterns of

the barracks isolate. These are greater passivity, less positive interpersonal relations and more negative attitudes towards the USAREUR experience. The passive/active difference is evident in the increasing amount of time spent by the barracks isolate watching TV, doing drugs and drinking as well as the decline in sports participation, travel, and dating. Barracks isolates have fewer friends, spend less time with friends and are less well liked than non-isolates. In addition, isolates report more trouble with their fellow soldiers and NCOs although consistent with the passivity of these individuals, they have fewer "run-ins" than do non-isolates. Finally, isolates report more negative attitudes towards Germany and their job and also less likelihood of reenlistment.

By six months, these three trends are well developed. With regard to passivity, isolates report more time spent watching television, just hanging around, doing drugs and drinking, and daydreaming. They report less time spent dating, doing hobbies, taking part in musical activities, going to museums, and traveling. Also, they report less use of the gym and recreation centers. Isolates continue to report fewer friends, less time spent with friends, and more trouble with both NCOs and officers. Again, supervisors indicate that isolates are less well liked but have fewer "run-ins" with fellow soldiers. Finally, isolates report more negative attitudes towards Germany, the Army, their job and less likelihood of reenlistment or interest in the Army as a career.

In summary, barracks isolation is a behavioral mechanism associated with passivity, poor interpersonal relations and negative attitudes towards USAREUR which seems to result in a decline in cognitive skills and job performance.

THE BEHAVIORAL AND PERSONOLOGICAL ANTECEDENTS OF BARRACKS ISOLATION

Introduction

Barracks isolation is a mechanism utilized by about one-fourth of the enlisted, first term, USAREUR soldiers to cope with their tour of duty in Germany. The ways in which a typical barracks isolate behaves are stereotypical and often follow a pattern of sameness reminiscent of artificially isolated environments. The barracks isolate typically makes a circle between his barracks room, work, and perhaps one or two recreational facilities on post (e.g., EM Club, movie theater, bowling alley). This lack of variation which then limits the soldiers' opportunities for contact with individuals other than those within his limited group, coupled with the reduced opportunities to participate in activities which would be available in the U.S.A., points to barracks isolation as a kind of self-selected group confinement.

Previous research (Miller, 1978) and the first half of this report examined the consequences of barracks isolation on soldiers' problem solving and vigilance skills, job performance, attitudes and behavior. In general, it was found that isolation is associated with lower cognitive skills, lower job performance, poorer adjustment to work and co-workers and less likelihood of retention in the Army. None of these differences was found to exist prior to coming to USAREUR. However, there may have been other conditions which helped determine who became a barracks isolate.

The purpose of this section of the report is to examine a number of antecedent factors which could help to account for why some people become isolates and others do not.

The basic underlying assumption central to any discussion of isolation and confinement is that human beings are characterized by a need for variable exteroceptive stimulation and that deprivation of such stimulation is an aversive condition to the organism, (Hebb, 1955; Berlyne, 1957). Thus, each individual has an optimal level of stimulation which is desirable to maintain. This level of stimulation is thought to consist of both intensity and variability components with variability generally being seen as the more critical to normal functioning (see Schultz, 1965).

There are three areas of research which have some bearing on the question of who becomes a barracks isolate. First, Zuckerman and his associates (see Zuckerman, 1979) have examined individual differences in sensation seeking - the drive to reach an optimal level of arousal or stimulation. Second, Myers and his associates (see Zubek, 1969) have explored the difference between individuals in their tolerances for sensors and perceptual deprivation. Finally, Rasmussen (1973), has put together a collection of papers which describe the process of adjustment to prolonged isolation and confinement in natural and work settings.

Previous research has indicated that some demographic factors are related to either sensation seeking, intolerance for sensory deprivation or both. Zuckerman, Eysenck and Eysenck (1978) found a significant linear decline in sensation seeking with age. Similarly, Hull and Zubek (1962), and Myers, Murphy, Smith and Goffard (1966) found younger subjects to be less tolerant of stimulus deprivation. In the present study, it was hypothesized that soldiers who become barracks isolates

would be somewhat older than non-isolates.

Studies which have examined racial differences in sensation seeking have generally found whites to be higher in sensation seeking than either hispanics or blacks (Kurtz and Zuckerman, 1978; Kaestner, Rosen and Appel, 1977). Therefore, it was hypothesized that more barracks isolates would be from non-white populations.

Data relating marital status to sensation seeking or tolerance for stimulus deprivation is not yet available. However, studies of successful adjustment to Antarctic expeditions have found married personnel to be less adaptable to the isolation and confinement (Gunderson, 1973).

Other demographic factors not examined in any of the previous studies that were included in this study were parents' educational level, religion and type of community in which the soldier grew up. It was expected that soldiers who were raised by parents with a high level of education might have learned coping skills which would allow them to more readily explore the German environment. Also, it was hypothesized that soldiers from a rural background might more easily cope with the largely rural nature of the German communities near which most of them were stationed than a former urban dweller.

Interpersonal relations (family, friends, co-workers) have been shown to play an important role in the individual's adjustment to isolation (Gunderson and Nelson, 1965). Also, Zuckerman and Link (1968) have noted the positive relationship between sensation seeking and affiliation. Thus, in the present study it was hypothesized that

non-isolates would have better interpersonal relationships than would isolates.

Activity level is of course central to the issue of sensation seeking. Thus, one expects sensation seekers and by extension non-isolates to pursue activities which provide optimal stimulation. Similarly, tolerance for stimulus deprivation would seem inversely related to activity level. Some particular types of activity preference which have been noted are watching TV which is negatively related to sensation seeking and positively related to tolerance for deprivation (Hall and Zubek, 1962) and smoking which is also positively related to tolerance for deprivation (Myers, et al., 1966).

A number of studies have examined the relationship between personality and sensation seeking. One of the key components of the authoritarian personality is tolerance for ambiguity which has been shown to be negatively related to sensation seeking (Bone and Cowling, 1974). A related factor is rigidity which has also been shown to be negatively correlated with experience seeking (Bone, Cowling and Chogan, 1974). In the present study it was hypothesized that barracks isolates would score higher on both rigidity and authoritarianism than would non-isolates.

Locus of control has been found to correlate with sensation seeking. Jacobs (1973) found that sensation seeking was greater for those individuals with an external locus of control than for internals. In general, studies which find this relationship (see Zuckerman, 1979) have used confined subjects (hospital patients, prisoners) which may be more similar to the USAREUR soldiers than college student populations. It

may be that individuals whose external environment places real limits on their freedom (for example: those who find the language barrier in USAREUR to be insurmountable) become external in their orientation.

Finally, self-esteem has been found to relate negatively to tolerance for deprivation and positively to adjustment in isolation (see Zabek, 1969).

Satisfaction with the nature of ones work and whether or not those individuals volunteer for the assignment were factors explored in the Navy's Antarctic studies (Rasmussen, 1973). The findings suggest that individuals are more likely to adjust successfully to an isolated environment if they volunteered and are satisfied with the nature of their work.

The final area explored in this study involved expectations. That expectations, both the individuals and those around him, can have a persuasive influence on subsequent behavior has been well documented (see Jones, 1977). Related to expectation, the present study examined whether preparation for USAREUR was in any way related to the barracks isolation phenomena.

In the present study, a number of items were included which can relate to those factors described above. Activity level and the individual's experience in adapting to change were examined as they related to family, peer, work and school relationships. A variety of demographic and personality items were included which relate to styles of adaptation and coping as described earlier. Finally, expectations about USAREUR and military factors were included.

Method

In addition to the questions described in Section I of this report, study participants also responded to a number of items which were designed to identify possible antecedent conditions which could predict who becomes a barracks isolate. The participants and procedures for obtaining these data were described in the first section of this report.

Predictor variables fell into ten separate categories. These were

1. Demographic factors
2. Family relations
3. Peer relations
4. School experiences
5. Work experiences
6. Activity preferences
7. Expectations about the USAREUR tour
8. Personality factors
9. Military issues
10. Preparation for USAREUR

Demographic Factors

Six demographic factors were included in the questionnaire. These were age, marital status, the type of community in which the soldier grew up, parents' educational level, race, and religion. The specific phrasing of each of these items is contained in Appendix D.

Family Relations

Participants were asked where they were living prior to enlistment (1 = with both parents to 6 = on my own, married), where they spent most

of their spare time (1 = all at home to 5 = all away from home), and whether they had ever run away from home (1 = yes, more than once to 4 = no, and I didn't want to). Finally, participants were asked to describe their relationship with their family (1 = Very close family to 4 = pretty much, go our own way).

Peer Relations

Participants were asked how many friends they had prior to coming into the Army (1 = many good friends to 3 = no really good friends). Also who they spent time with was asked (1 = with a number of friends to 4 = alone). Finally, participants were asked about dating behavior, including how much time they spent dating (1 = much time to 4 = no time) and how often they went out on dates (1 = once a year or less to 6 = two or more times a week).

School Experiences

Four items involved school experiences. They were highest grade completed (1 = 8th grade or less to 9 = post-graduate work), suspension experience (1 = yes, more than once to 3 = no, never), trouble getting along with teachers (1 = yes, a great deal to 3 = no, not at all), and trouble getting along with students (1 = yes, a great deal to 3 = not really).

Work Experiences

Participants were asked whether they were employed prior to entering the Army (1 = no and not looking to 5 = yes, full time) and whether they had ever been fired from a job (1 = no to 4 = yes, more than twice).

Expectations

A variety of expectations about Germany and USAREUR were solicited from the participants. These included a ten-item semantic differential on what the soldier expected Germans to be like (1 = positive evaluation to 7 = negative evaluation), and a five-point scale on whether they expected to like Germany (1 = very much to 5 = not at all).

Six items asked the soldiers how serious they anticipated certain specific problem areas to be (1 = serious to 3 = no problem). These included (1) getting time off to go to all the places I want, (2) finding interesting places to go, (3) finding things to do that I liked to do in the States, (4) talking to Germans, (5) getting to know members of the opposite sex, and (6) being able to afford doing what I want to do. Also, soldiers were asked where they expected to spend their spare time (1 = barracks area to 3 = off post).

Activity Preferences

Participants were asked how much time they spent in ten spare-time activities (1 = spent much time to 4 = spent no time). These activities were (1) playing or watching sports, (2) watching TV, (3) dating, (4) hobbies, (5) hanging around with friends, (6) movies, (7) museums and cultural activities, (8) music, (9) reading, and (10) travel. Also, participants were asked their preference for indoor (1) or outdoor (3) activities.

Personality Characteristics

Short versions of four personality scales were administered. These

were designed to tap internal/external locus of control, authoritarianism, rigidity, and self-esteem. Appendix D contains the scale items and the scoring protocol for the scales.

Military Issues

Three questionnaire items which could be potential predictors of isolation can be grouped together under military issues. These include satisfaction with one's MOS (yes, no), tour length in months, and whether or not the soldier volunteered for Germany (yes, no).

Preparation for USAREUR

Participants were asked what their friends thought of an assignment to Germany (1 = very lucky to 5 = very unlucky), what they had heard about Germany (1 = only good things to 5 = only bad things), whether they had received any briefings, the "Welcome to Deutschland" newspaper or any other literature (yes, no) about Germany.

Results

Classification of isolates and non-isolates was made after six weeks and again after six months in the manner described in the first section. The results section will present and compare those variables which distinguished between isolates and non-isolates on both a short-term initial basis (first six weeks in USAREUR) as well as those soldiers who were isolates or non-isolates throughout their first six months in USAREUR.

Demographic Factors

Analysis of variance indicated that soldiers who became barracks isolates during their first six weeks in USAREUR were younger ($\bar{X} = 19.08$) than those who were non-isolates ($\bar{X} = 20.17$), $F(1, 341) = 3.98$, $p < .05$.

However, no age differences were found for those who maintained their isolation throughout the first six months ($\bar{X} = 19.15$) as compared to comparable non-isolates ($\bar{X} = 19.89$), $F(1, 187) = 1.03$, $p < n.s.$

No differences were found between isolates and non-isolates either initially or over the longer term based on marital status, type of community in which the soldier grew up, race or religion. Also, no difference was found as a result of fathers' educational level ($p_s = n.s.$). However, analysis of variance did indicate that the mothers of long term isolates had somewhat less formal schooling ($\bar{X} = 5.17$) than did the mothers of non-isolates ($\bar{X} = 5.80$), $F(1, 174) = 2.16$, $p < .14$.

Family Relations

Barracks isolates were somewhat more likely to have lived at home than away prior to entry into the Army. Thus, short term isolates ($\bar{X} = 2.11$) indicated that they were more likely to have lived at home than non-isolates ($\bar{X} = 2.43$), $F(1, 341) = 3.30$, $p < .07$ and long term isolates ($\bar{X} = 2.15$) indicated that they were also more likely to have lived at home than non isolates ($\bar{X} = 2.55$), $F(1, 184) = 2.48$, $p < .11$.

Similarly, short term barracks isolates reported somewhat closer family ties ($\bar{X} = 1.47$) than did non-isolates ($\bar{X} = 1.62$), $F(1, 336) = 2.45$, $p < .12$. This difference did not approach significance for longer term isolates.

In terms of where the soldier spent time before joining the Army, short term isolates ($\bar{X} = 2.79$) responding spending more time at home than did non-isolates ($\bar{X} = 3.12$), $F(1, 342) = 9.76$, $p < .002$. Long term isolates also reported spending more time at home ($\bar{X} = 2.71$) than did non-isolates ($\bar{X} = 3.02$), $F(1, 185) = 4.85$, $p < .03$.

No differences were found between isolates and non-isolates (short or long term) on their history of running away from home.

Peer Relations

Analysis of variance indicated no significant difference between isolates (short term or long term) on the number of friends they had, whether they spent time with friends or alone, or the frequency with which they dated.

School Experiences

Analysis of variance indicated that short-term barracks isolates had completed less formal education ($\bar{X} = 3.49$) than non-isolates ($\bar{X} = 3.64$), $F(1, 342) = 2.57$, $p < .10$. Long term isolates had completed significantly less schooling ($\bar{Y} = 3.47$) than non-isolates ($\bar{X} = 3.77$), $F(1, 185) = 4.99$, $p < .05$.

No differences were found between isolates and non-isolates on the frequency of suspension or on how often they got into trouble with either teachers or fellow students.

Work Experiences

No significant differences were found between isolates and non-isolates with regard to prior employment or whether or not they had ever been fired from a job.

Expectations

Analysis of variance indicated no significant differences between isolates and non-isolates in their attitudes towards Germans and Germany prior to arrival in USAREUR, their assessment of potential problems, or how they expected to spend their spare time.

Activity Preference

Two of the ten spare-time activity items distinguished between isolates and non-isolates. Short term isolates indicated that they had spent less time ($\bar{X} = 2.77$) than had non-isolates, ($\bar{X} = 2.51$) in traveling prior to joining the Army. This difference was not significant however for long term isolates ($\bar{X}_s = 2.60$ vs 2.51). Long term isolates, on the other hand, reported more time spent watching television ($\bar{X} = 2.33$) than did non-isolates ($\bar{X} = 2.63$), $F(1, 162) = 4.47$, $p < .05$. These differences between short term isolates ($\bar{X} = 2.37$) and non-isolates ($\bar{X} = 2.50$) were not significant, $F(1, 292) = 1.03$, $p = n.s.$

Personality Characteristics

No significant personality differences between isolates and non-isolates were found using the scales for rigidity, locus of control, self-esteem or authoritarianism. However, two scale items from the rigidity scale did show some differences. Short term barracks isolates more strongly agreed with the statement "I do not enjoy having to adapt myself to new and unusual situations" ($\bar{X} = 2.69$) than did non-isolates ($\bar{X} = 2.48$), $F(1, 325) = 6.42$, $p < .02$. This difference was marginally significant for long term isolates ($\bar{X} = 2.68$) vs non-isolates ($\bar{X} = 2.51$), $F(1, 178) = 2.37$, $p < .12$. Also, short term isolates tended to more strongly agree with the statement "I dislike having to learn new ways of doing things" ($\bar{X} = 2.27$) than did non-isolates ($\bar{X} = 2.13$), $F(1, 324) = 2.17$, $p < .14$. The mean difference in response to the question for long term isolates ($\bar{X} = 2.27$) vs non-isolates ($\bar{X} = 2.05$) was also significant, $F(1, 175) = 4.25$, $p < .05$.

Military Issues

Analysis of variance indicated no significant differences between isolates and non-isolates (short or long term) on satisfaction with MOS. Soldiers who became isolates during the first six weeks were less likely to have volunteered for Germany ($\bar{X} = 1.50$) than those who did not become isolates ($\bar{X} = 1.33$), $F(1, 335) = 4.73$, $p < .05$. Volunteering did not distinguish between soldiers who became long term isolates and those who did not, ($F < 1$). Also, no differences in expected tour length were found between short-term isolates and non-isolates ($F < 1$). The difference between long term isolates and non-isolates also was not significant, $F(1, 183) = 1.76$, $p = n.s.$

Preparation for USAREUR

No significant differences were found between isolates and non-isolates (short or long term) on any of the preparation items.

Discussion

This study examined a variety of behavioral and personological factors which could be potential antecedents of barracks isolation on both a short and longer term basis. In general, the results indicated few "predictors" of barracks isolation.

Soldiers who become barracks isolates as an initial response to the USAREUR assignment tend to be younger, come from closer family situations, have less experience away from home, have less formal schooling, indicate somewhat less adaptability, are less likely to have volunteered for Germany and arrive with longer tour expectations. Of these factors,

age, family closeness, and volunteering relate only to short-term (first six weeks) isolation and not to isolation throughout the first six months. Factors which relate to consistent isolation throughout the period of this study include less schooling, less time away from home, less adaptability and more time spent watching television.

It would appear that most of the significant differences between those soldiers who become barracks isolates and those who do not develop as a result of the USAREUR experience itself and are not strongly related to factors existing prior to the soldiers' entry into the Army. In general, it seems that the pattern of behavior known as barracks isolation begins to develop during the first six weeks and may involve critical experiences related to interpersonal functioning and adjustment to the newness of both Germany and USAREUR. These patterns which develop early lead to measurable consequences as soon as six months after the soldier's arrival.

Reference Notes

1. Farmer, M. USAREUR Personnel Opinion Survey, 1977
Questionnaire administered throughout USAREUR to over 10,000 soldiers asked "Where do you spend your off-duty time?" Twenty to twenty-five percent responded "mostly in the barracks."

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APPENDIX A

Culture Fair Intelligence Test, Scale 2

SURVEY OF COGNITIVE SKILLS

NAME _____

RANK _____

UNIT _____

The U. S. Army Research Institute for the Behavioral and Social Sciences (ARI), USAREUR Field Unit, is conducting a study of individual and unit training programs implemented by USAREUR units.

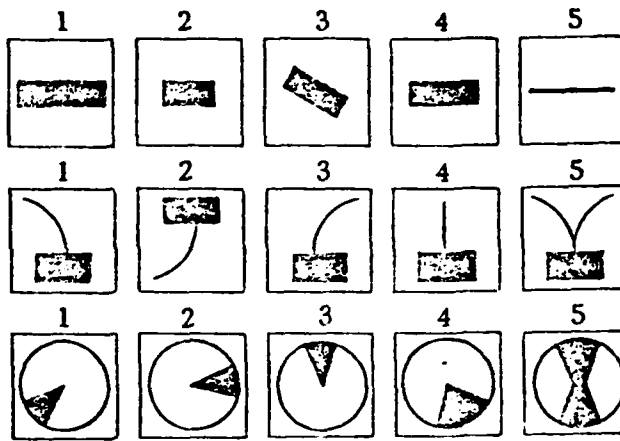
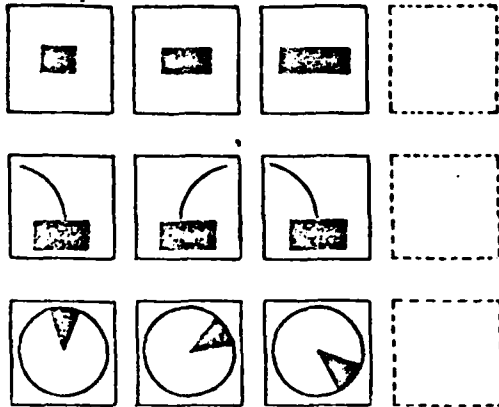
This survey is designed to assess the cognitive skills of USAREUR soldiers. It consists of a series of problems for which you are asked to provide a correct solution. The scientist administering this survey will explain in detail how each set of problems is to be done.

Thank you for your participation in this study. Your assistance will enable us to design training programs which best serve the needs of service members assigned to USAREUR.

NOT TO BE SHOWN TO UNAUTHORIZED PERSONS. NOT
TO BE REPRODUCED IN ANY FORM WITHOUT THE
SPECIFIC PERMISSION OF THE TECHNICAL DIRECTOR
OF THE U.S. ARMY RESEARCH INSTITUTE FOR THE
BEHAVIORAL AND SOCIAL SCIENCES, OFFICE OF THE
DEPUTY CHIEF OF STAFF FOR PERSONNEL,
DEPARTMENT OF THE ARMY.

TEST 1

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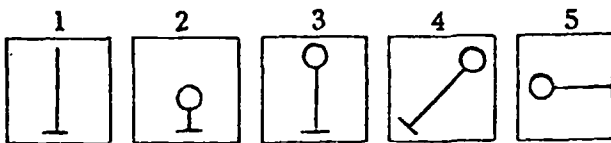


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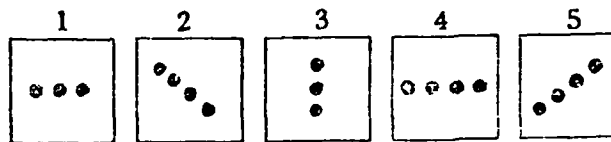
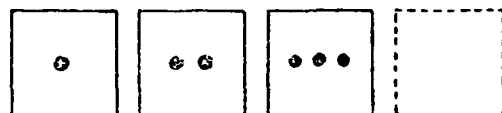
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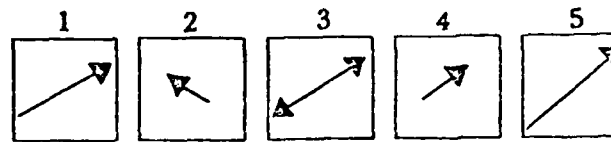
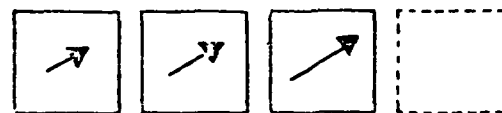
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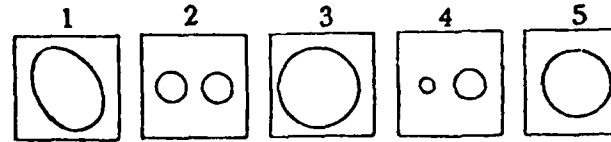
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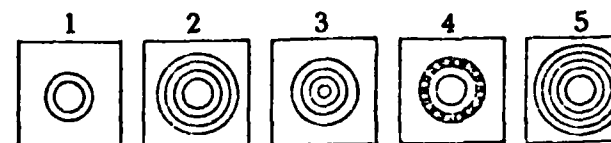
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5.









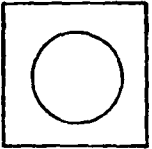
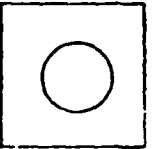
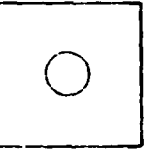
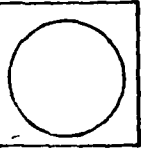
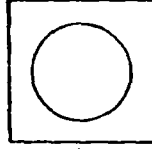
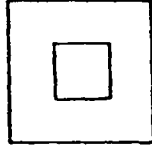
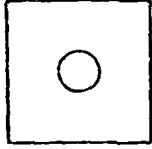
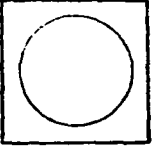
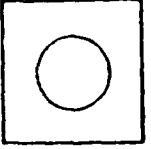
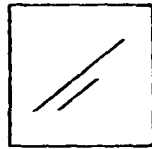
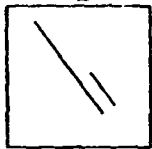
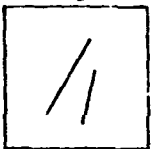
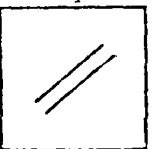
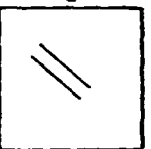
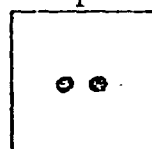
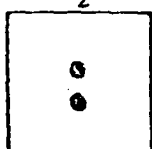
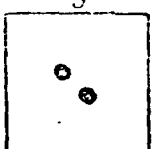
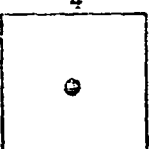
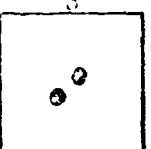
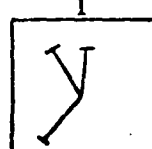
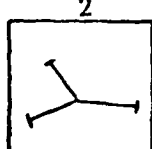
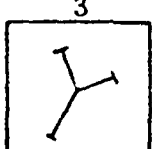
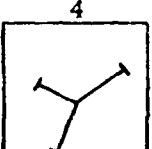
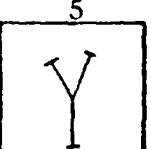
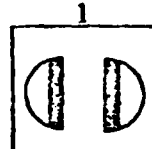
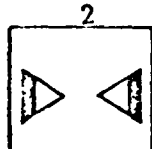
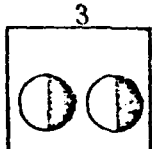
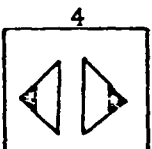
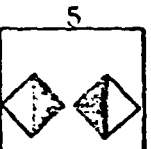
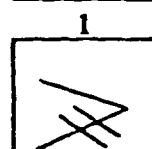
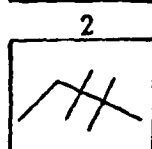
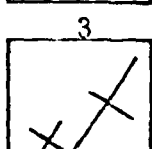
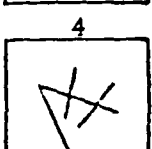
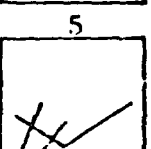
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Answers

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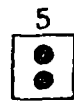
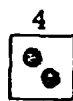
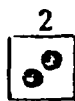
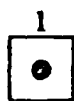
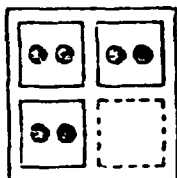
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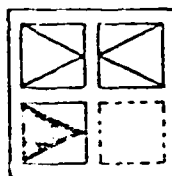
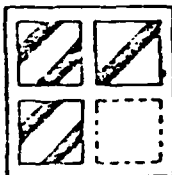
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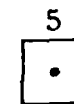
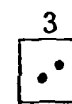
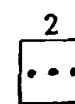
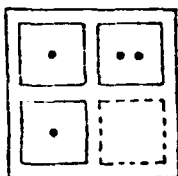


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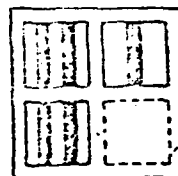
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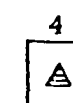
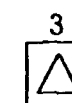
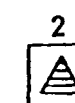
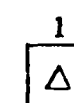
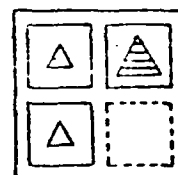
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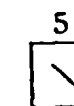
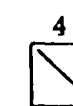
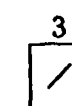
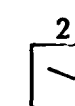
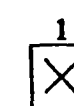
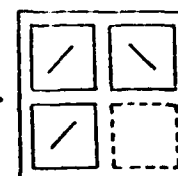
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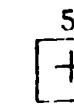
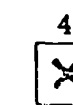
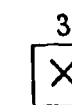
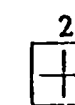
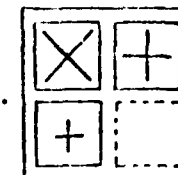
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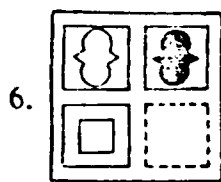


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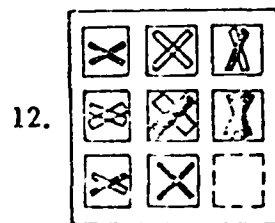
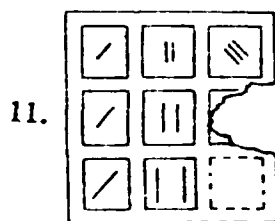
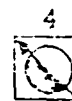
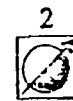
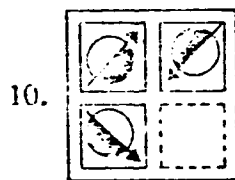
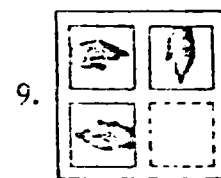
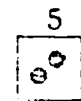
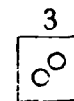
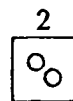
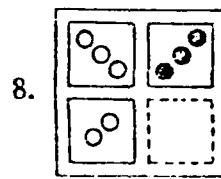
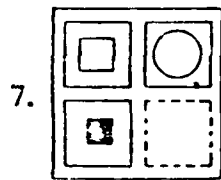


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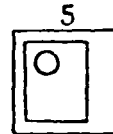
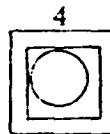
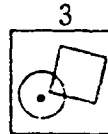
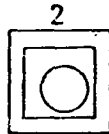
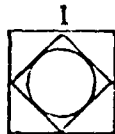
Answers



End of Test 3

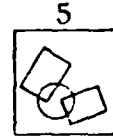
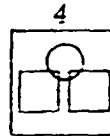
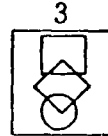
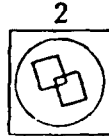
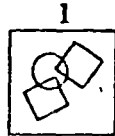
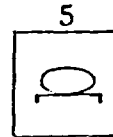
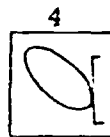
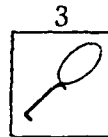
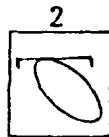
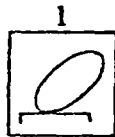
TEST 4

Examples

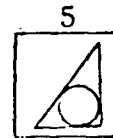
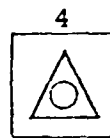
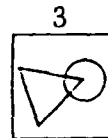
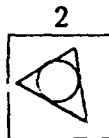
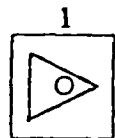


Answers

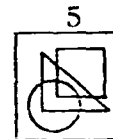
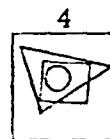
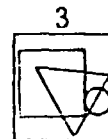
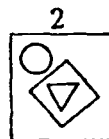
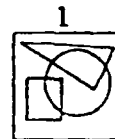
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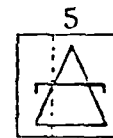
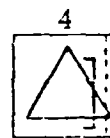
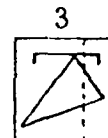
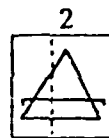
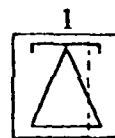
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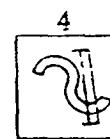
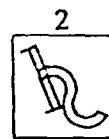
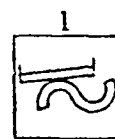
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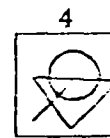
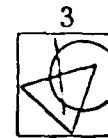
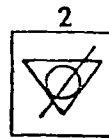
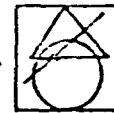
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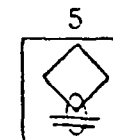
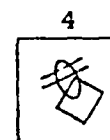
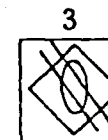
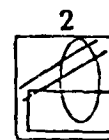
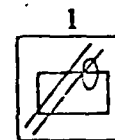
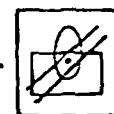
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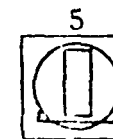
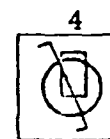
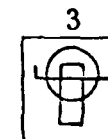
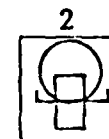
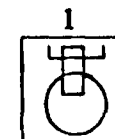
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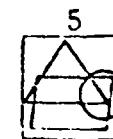
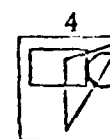
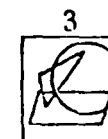
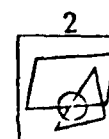
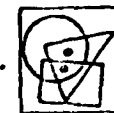
6.



7.



8.



End of Test 4

A-8

APPENDIX B

Perceptual Skills Test Answer Sheet

Perceptual Skills Test

Answer Sheet

Example

2 4 7 9 5 6
Last Number

-
1.
Last Number
 2.
Last Number
 3.
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 4.
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 14.
Last Number
 15.
Last Number

APPENDIX C

Raters/Endorsers Evaluation Form

HUMAN

HUMPRO

RESEARCH ORGANIZATION

HQ, USAREUR and 7th Army
ODCSPER (ARI), B3x 127
APO, New York 09403

14 April 1980

To Supervisor of _____:

The Human Resources Research Organization (HumPRO) working under contract to the Army Research Institute, USAREUR is conducting an intensive study of how first term enlisted personnel adapt to the Army and to living in Germany. The main objective of this study is to examine how first term personnel learn to cope with difficult aspects of their environment, such as being in the Army, their jobs, being in Germany, etc. In order to accomplish this objective we will be surveying each individual in the study three times during a 10-month period. In our analysis of the survey results we hope to identify different ways in which to make the adjustment easier for individuals and better for the Army.

As the supervisor of one or more of the study subjects, you will play an important role in the successful completion of this research. One of the major factors in determining how individuals are adjusting to the Army and Germany is to determine how well they are doing on their jobs. For this reason we are asking the direct supervisor (rater) and second level supervisor (endorser) of each study participant to provide a complete and frank evaluation of that person's performance during the term they have been in the unit.

While these evaluations ask some questions similar to an EER, they will never become part of the individual's official record. In fact, aside from yourself and our research staff no other person will ever have access to these evaluations. Given this level of confidentiality we hope that you will provide a complete, frank and honest appraisal of each person's performance since they arrived in your unit.

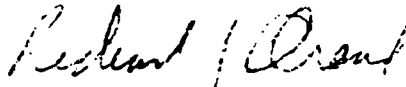
Attached to this letter is a short evaluation form for the person named at the top. Please fill out this form and make any additional comments you feel are necessary to describe how this person performs their Army job and gets along in the unit. Keep in mind that these evaluations are not part of an official record, but your estimate of this person's contribution to fulfilling their assigned role in the Army given the amount of experience they now have. When you have finished the evaluation, place it in the attached envelope, seal it, and return it to the person who gave it to you. The individual's name should not appear on the outside of the envelope.

Should you have any questions please ask the individual who gave you the forms or you can contact us directly through that person. Please do not discuss this form with the individual being rated, as we do not want them to feel any additional pressure as a result of having participated in the study. You may, however, inform them that they were evaluated as part of

the study and that these evaluations are completely confidential. You should do this only after you have returned the completed form to our administrator.

We greatly appreciate the help you are providing and hope that completing this evaluation will give you an opportunity to examine the performance of this and other individuals in your unit in greater detail than you might normally have done.

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard J. Orend".

Richard J. Orend, Ph.D.
Project Director

Evaluation Form - Five Month Performance

Please answer all questions. If you have no knowledge of a particular area or question, check the Don't Know category.

1. Duty position title of individual being rated _____.
2. Pay grade _____.
3. How long has this individual been in your unit? _____ weeks.
4. For each of the following items describe the individual's performance in terms of the categories provided by checking the appropriate box. Keep in mind that you are rating a number of separate categories of performance and behavior; therefore, ratings need not be the same in all categories. Some people do better in some areas than others. The rating scale is:
 - A. One of the best soldiers in this area that you have ever known.
 - B. An outstanding soldier, doing excellent work in this area.
 - C. Above average in this area.
 - D. Average, typical of the majority of soldiers in this area, performs work and other functions adequately.
 - E. Somewhat below average, but still does a passable job.
 - F. Far below average, his/her use to the Army is marginal. Would raise serious questions about letting this person reenlist or stay in the Army given their performance in this area.
 - G. Completely unacceptable performance in this area. Would remove individual from job and Army if given the opportunity.

	Out- Best	Above standing	Average	Average	Below Average	Marginal	Unacceptable Out of Army	Don't Know
a. Willing to learn new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Knows how to do the job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Works well without supervision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Does tasks that need to be done without being told	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Tries to learn new things on his/her own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Is interested in Army job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Out- Best	standing	Above Average	Average	Below Average	Marginal	Unacceptable Out of Army	Don't Know
g. Gets along with fellow soldiers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Gets along with supervisor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Follows orders readily without discussion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Can be trusted to complete job on his/her own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Does job effectively	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Works well as part of the team	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Shows loyalty to the unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Would want this person with me in combat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. The following items refer to social adjustment and behavior. Please express your opinions candidly and to the best of your knowledge.

	Very True	Somewhat True	Neutral In The Middle	Somewhat Untrue	Very Untrue	Don't Know
a. Goes off post a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Has many friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Can get along on the German economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Has run-ins with other soldiers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Drinks a lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Participates in recreation (sports, etc.) programs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Is well liked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Uses drugs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Spends most free time hanging around the barracks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. The following question should be answered to the best of your knowledge.

a. Number of Article 15's since arrival in unit? _____

b. Number of Courts Martial since arrival in unit? _____

c. Number of sick days since arrival in unit? _____

7. A "barracks rat" is an individual who spends most of his/her off-duty time in or around the barracks, seldom ventures off-post. This type of persons often engages in the same off-duty activities day in and day out. For example, a person whose non-duty time is typically spent on post, in the barracks with limited time in few on-or off-post activities could probably be considered a "barracks rat".

To what extent is the individual considered here a "barracks rat"?

Very much so

☐

Some

☐

Very little

☐

Not at all

☐

8. Please describe any other factors you think are important in evaluating this soldier.

In order to determine if our subjects are being rated by the same or different individuals over time, it is necessary that we know your name. This information will be used only to determine rater continuity.

Name: _____

Grade: _____

Length of Service: _____ years _____ months

Are you normally the RATER or ENDORSER for this person?

☐ Rater

☐ Endorser

☐ Other: _____

Thank you very much for your help.

APPENDIX D

Demographic Items and Personality Scales

Demographic Items

C1C16 - How old are you? _____ years

C1C26 - Are you married?

- 1 No, I never have been.
- 2 No, but I once was.
- 3 Yes, but I am legally separated from my wife (husband).
- 4 Yes, but my wife (husband) will stay in the States while I'm in Germany.
- 5 Yes, and my wife (husband) will come/is in Germany with me.

C1C28 - In what type of community did you grow up?

- 1 Urban neighborhood, large city.
- 2 Urban neighborhood, small city.
- 3 Suburbs.
- 4 Country or farm area.
- 5 Moved a lot, no particular type.

C1C40, 41 - What was the highest grade your parents completed in school?

<u>Father</u>	<u>Mother</u>	
01	01	8th grade or less
02	02	9th grade
03	03	10th grade
04	04	11th grade
05	05	12th grade or high school grad or GED equivalent
06	06	1 year college
07	07	2 year college or associate degree
08	08	3 year college
09	09	4 year college (B.A., B.S., etc.)
10	10	Post graduate work including higher degree

C1C44 - In which ethnic or racial group do you consider yourself?

- 1 Black, Afro-American
- 2 Spanish or Latin American, Chicano, Puerto Rican, Cuban
- 3 Oriental or Asian American
- 4 Native American, Indian
- 5 White, Caucasian

C1C45 - What is your religious preference?

- 1 Roman Catholic
- 2 Protestant (including Lutheran, Baptist, Methodist, Presbyterian, Church of Christ, and other American non-Catholic Christian Churches)
- 3 Jewish
- 4 Moslem
- 5 Buddist, Hindu or other Eastern Religion
- 6 Other, please identify: _____
- 7 None

Personality Scales

Rotter - Internal/External Locus of Control

	Strongly Agree	Agree	Disagree	Strongly Disagree
In the long run people get the respect they deserve in this world.	1	2	3	4
Chance and luck do not play an important role in my life.	1	2	3	4
Unfortunatly, a person's worth often goes unnoticed.	4	3	2	1
Many times I feel that I have little influence over the things that happen to me.	4	3	2	1
Becoming a success is a matter of hard work, luck has little or nothing to do with it.	1	2	3	4
Getting a good job depends mainly on being in the right place at the right time.	4	3	2	1

SRC - Modified F Scale (Authoritarianism)

Human nature being what it is, there must always be war and conflict.	4	3	2	1
What young people need most of all is strict discipline by their parents.	4	3	2	1

Personality Scales (continued)

	Strongly Agree	Agree	Disagree	Strongly Disagree
A few strong leaders could make country better than all the laws and talk.	4	3	2	1
One main trouble today is that people talk too much and work too little.	4	3	2	1
People can be trusted.	1	2	3	4
People sometimes say that an insult to your honor should not be forgotten.	4	3	2	1
Most people who don't get ahead just don't have enough will power.	4	3	2	1

Wesley - Rigidity Scale - Shortened Version

There is usually only one best way to solve most problems.	4	3	2	1
I usually maintain my own opinions even though many other people may have a different point of view.	4	3	2	1
I do not enjoy having to adapt myself to new and unusual situations.	4	3	2	1
My interests change very quickly.	1	2	3	4
I like a great deal of variety in my work.	1	2	3	4
I dislike having to learn new ways of doing things.	4	3	2	1

Modified Bergen Self-Acceptance Scale

I feel that I'm a person of worth, at least on an equal plane with others.	1	2	3	4
I feel that I have a number of good qualities.	1	2	3	4

Personality Scales (continued)

	Strongly Agree	Agree	Disagree	Strongly Disagree
All in all, I am inclined to feel that I am a failure.	4	3	2	1
I am able to do things as well as most other people.	1	2	3	4
I feel I do not have much to be proud of.	4	3	2	1
On the whole, I am satisfied with myself.	1	2	3	4
At times I think I am no good at all.	4	3	2	1
I wish I could have more respect for myself.	4	3	2	1
I certainly feel useless at times.	4	3	2	1
I take a positive attitude toward myself.	1	2	3	4